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ABSTRACT

A study examined the impact of teaching handicapped students in regular vocational education classrooms on class interaction and instructional variables. During the study, researchers conducted individual interviews with 22 vocational education instructors from 11 randomly selected school districts throughout Texas and later conducted a total of 678 thirty-six minute observation periods of the vocational classes taught by these same 22 teachers. Based on their analysis of the data obtained from the class observations and instructor interviews, the researchers concluded that over 90 percent of the timed classes were organized as a group with handicapped students participating fully within the group. Ninety-six percent of the vocational instructors stated that the general interactions of handicapped and nonhandicapped students in the vocational setting were positive. While 87 percent of the teachers had not seen a copy of their students' individualized education programs (IEP), all of the vocational instructors were individualizing instruction for the handicapped students in their classrooms. Generally speaking, the modifications that were made for the handicapped vocational students were of an instructional nature and did not entail any excess costs. Recommendations were made calling for more hands-on activities and more one-to-one instruction for the handicapped students in regular vocational settings. (MN)

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HANDICAPPED STUDENTS IN REGULAR VOCATIONAL EDUCATION: IMPACT ON CLASS INTERACTION AND INSTRUCTIONAL VARIABLES

FINAL REPORT

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December, 1981

The research described herein was performed in cooperation with the Research Coordinating Unit, Department of Occupational Education and Technology, Texas Education Agency.

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Introduction

Rationale for Study

Federal and state involvement in and committment to the education of handicapped students in vocational education has been recognized since the Vocational Education Act of 1963. The Vocational Education Amendments of 1968 mandated that special programs be developed with the aid of federal funding. Each state was required, by law, to designate at least 10% of the available vocational funds to serve the handicapped and to offer vocational programs for students with handicaps. As a result of federal and state legislation, vocational educators are expected to serve handicapped students in regular as well as special programs.

Three federal laws that directly affect programming for handicapped students are: Public Law 95-142, Public Law 94-482, and Public Law 93-112. Public Law 94-142, The Education for All Handicapped Children Act of 1975, provides for a free and appropriate education for all handicapped students between the ages of three and 21. Vocational education programs must be specifically planned so that students with handicaps may participate with nonhandicapped students to the maximum extent possible. Public Law 94-482, The Education Amendments of 1976, requires each state to designate at least 10% of the available vocational funds to serve the handicapped. Public Law 93-112 Section 504, Rehabilitation Act of 1973, protects the civil rights of the handicapped. Section 504 prohibits discrimination against all persons with a handicap by any program or activity receiving Federal assistance. The enactment of this federal legislation has resulted in less isolation of the handicapped, both socially and educationally, and has

strengthened the ability of the states to provide vocational education for those groups who have previously received limited service. As a result of the mandate which provides for a written individualized education program for each student, the educational needs of the handicapped student in vocational education and the educational services required to meet those needs should be clearly defined. It is evident that these three laws have had a substantial impact on vocational education programming for handicapped students.

In Texas, Meyer (1972) reported the first statewide data on vocational education for the handicapped. This study was a broad overview of operating programs in Texas and was conducted to ascertain areas of strength and areas where improvement was needed. As a result of this work, recommendations were made for future programming, and proposal and program evaluation guidelines were developed.

Fair (1976) surveyed the status of vocational education programming for handicapped school aged students in Texas. This study was completed by utilizing a questionnaire survey of school districts and by local interviews in seventeen of these school districts. Fair (1976) identified several areas of concern: (1) vocational education teachers were not properly prepared to educate special education students, (2) a need for vocational curriculum modification, (3) a need for vocational evaluation, and the (4) admission, review, and dismissal (ARD) process needed a thorough investigation.

Fair (1980) investigated the accessability of vocational education programs for handicapped students in the state of Texas. This study interviewed personnel in 40 school districts across the state to investigate the inclusion of handicapped students in vocational education programming. It

was determined that 36 out of 40 school districts were serving special education students in regular vocational education programs; however, the nature of the instructional process varied greatly from teacher to teacher and from district to district. It was also determined that the involvement of vocational education personnel in the development and implementation of the IEP was limited. As this research was conducted, many school districts requested assistance in implementing vocational services for handicapped students in regular vocational education programs.

In answer to this request for assistance in providing services for handicapped students in regular vocational education programs, a survey of research identified that no studies had specifically observed handicapped students in regular vocational education classrooms, and that this instructional process had not been systematically investigated using empirical data. Research pertaining to classroom interaction analysis was available but none that specifically related to vocational education. The classroom interaction analysis research that was available focused on the interaction between the teacher and the class rather than the interaction between the teacher and the individual student. Relatively little educational research has focused on the interaction between the teacher and the individual student. Therefore, personnel at The University of Texas at Dallas proposed such a study which was funded by the Research Coordinating Unit, Department of Occupational Education and Technology, Texas Education Agency.

Purpose of Study

The purpose of this investigation was to gather data pertinent to the instruction of special education students in regular vocational education programs. Systematic observational and interview data relative to this instructional process was not available.

The specific objectives, as outlined in the project proposal were:

1. To observe and describe the handicapped student - vocational instructor interaction in regular vocational education programs.
2. To observe and describe the handicapped student - nonhandicapped student interaction in regular vocational education programs.
3. To describe the development and implementation of the individual education plans (IEP's) for handicapped students in regular vocational education programs.
4. To describe the instructional adaptations and modifications that can be defined as excess costs for funding purposes.
5. To develop recommendations for more effective instruction of handicapped students in regular vocational education programs.

Approach of Study

The approach that was used to accomplish the objectives of the study had two parts. First, data was obtained from individual interviews with vocational education instructors, and secondly, these same instructors were observed during instruction on three separate occassions at which time observations were systematically recorded.

Interviews with Vocational Instructor. Eleven independent school districts were randomly selected for detailed observations and interviews. These districts were stratified according to geographical location and the number of students enrolled. In each of these districts the project supervisor conducted a detailed interview with the two vocational education instructors who were to be observed. The data from each of these interviews was analyzed and interpreted in reference to the objectives of the study. During the interview process the vocational instructor was informed that

all comments made were confidential. No other personnel in the school districts were interviewed.

Observations in the Vocational Setting. The project supervisor observed the instructional interaction between the handicapped student and the vocational instructor and the interaction between the handicapped student and nonhandicapped students for the instructors who were interviewed. These observations were made on three different days using an observation instrument specifically designed for this purpose. The "Fair Vocational Education Observation System" was designed to record the vocational instructor/handicapped student and the handicapped student/nonhandicapped student interactions. The data were collected during the 1980-81 school year.

Organization of Report. This report is a detailed description of the project activities, results, and recommendations. The Methodology Chapter discusses the procedures for the selection of the school districts and the interview and observation processes. This chapter also provides detailed information on the questionnaire procedures, observation procedures, and data analysis. The Results Chapter presents descriptive statistics and explanatory comments. This chapter reports information pertinent to each of the five objectives of the study, describes the vocational setting in which interviews and observations were conducted, and presents comments that were made by the vocational instructors. Interpretations and recommendations are included in the Discussion Chapter. Trends and variables which are pertinent to a proactive model for intervention with vocational instructors of handicapped students in regular vocational education programs will be highlighted. The last chapter summarizes the complete report and

succinctly states the major findings. Readers are directed to this chapter for a brief account of the study.

Abbreviations

ADA - Average Daily Attendance

ARD - Admission, Review, Dismissal

CVAE - Coordinated Vocational - Academic Education: separate vocational programming for the economically or academically disadvantaged

IEP - Individualized Education Program

VI - Vocational Instructor

HS - Handicapped Student

NHS - Nonhandicapped Student

VEH - Vocational Education for the Handicapped: Separate vocational programming for the handicapped

METHODOLOGY

Selection of School Districts

To accomplish the objectives of this project, eleven school districts in Texas were randomly chosen in which vocational classroom observations and detailed interviews were to be conducted. These districts were stratified according to geographical location and reported average daily attendance (ADA). This selection process began with a letter of introduction that was sent to 286 school districts who had volunteered and participated in the research project entitled Vocational Education Programming for Special Education in Texas - 1980. These districts that had volunteered to participate in the 1980 project had demonstrated an attitude of cooperation and a desire to improve vocational education programming for the handicapped. This initial letter explained the objectives and rationale of the project, the criteria necessary for participation, and also included a reply form on which the superintendants could indicate whether or not they were willing to cooperate with the study. The main criteria necessary for participation was that the district have two regular vocational teachers who each instructed two handicapped students. A copy of this letter and reply form is located in Appendix A. Approximately three weeks after the initial letter was sent, a reminder letter was sent to those superintendants from whom responses had not been received. A total of 236 replies was received from the 286 letters that were mailed. This was an 83% reply rate. From the replies 102 or 43% stated that they were willing to participate in the study; 60 or 25% stated they would not like to participate, and 64 or 28% replied that their district

did not meet the necessary criteria for participation. Those school districts that replied positively were then categorized according to ADA Category and Service Delivery Coordination Cluster for Special Education. Figure 1 is a map of these cluster boundaries and the Education Service Center Regions located in each cluster. Two idependent school districts within each cluster area were selected. The five ADA categories used were:

Category 1, 1-999 pupils

Category 2, 1,000-2,999 pupils

Category 3, 3,000-8,999 pupils

Category 4, 9,000-11,999 pupils

Category 5, 12,000 or more pupils.

Table 1 details the exact composition of the districts that replied according to ADA Category and Service, Delivery and Coordination Clusters for Special Education. By use of a random numbers table, two school districts were selected from each Service Delivery and Coordination Cluster for Special Education so that the complete sample would also be representative according to ADA Category. One extra district was selected from Cluster D in case of attrition.

Procedure for Interview of Vocational Instructor

Approximately six weeks prior to the proposed visitation day, a letter was sent to the person in the selected school districts who was responsible for vocational education. This letter stated the purpose of the project, the agreement of the Superintendant to cooperate, visitation date, name of the person from the project who would be conducting the interview and observations, and the date for a confirmation telephone call. Approximately two weeks later, a follow-up telephone call was made to this contact person confirming the first visitation date and responding to any questions regarding the inter-

Education Service Center Regions

Cluster A: 16, 17, 18, 19

Cluster B: 9, 11, 14, 15

Cluster C: 7, 8, 10, 12

Cluster D: 3, 4, 5, 6

Cluster E: 1, 2, 13, 20

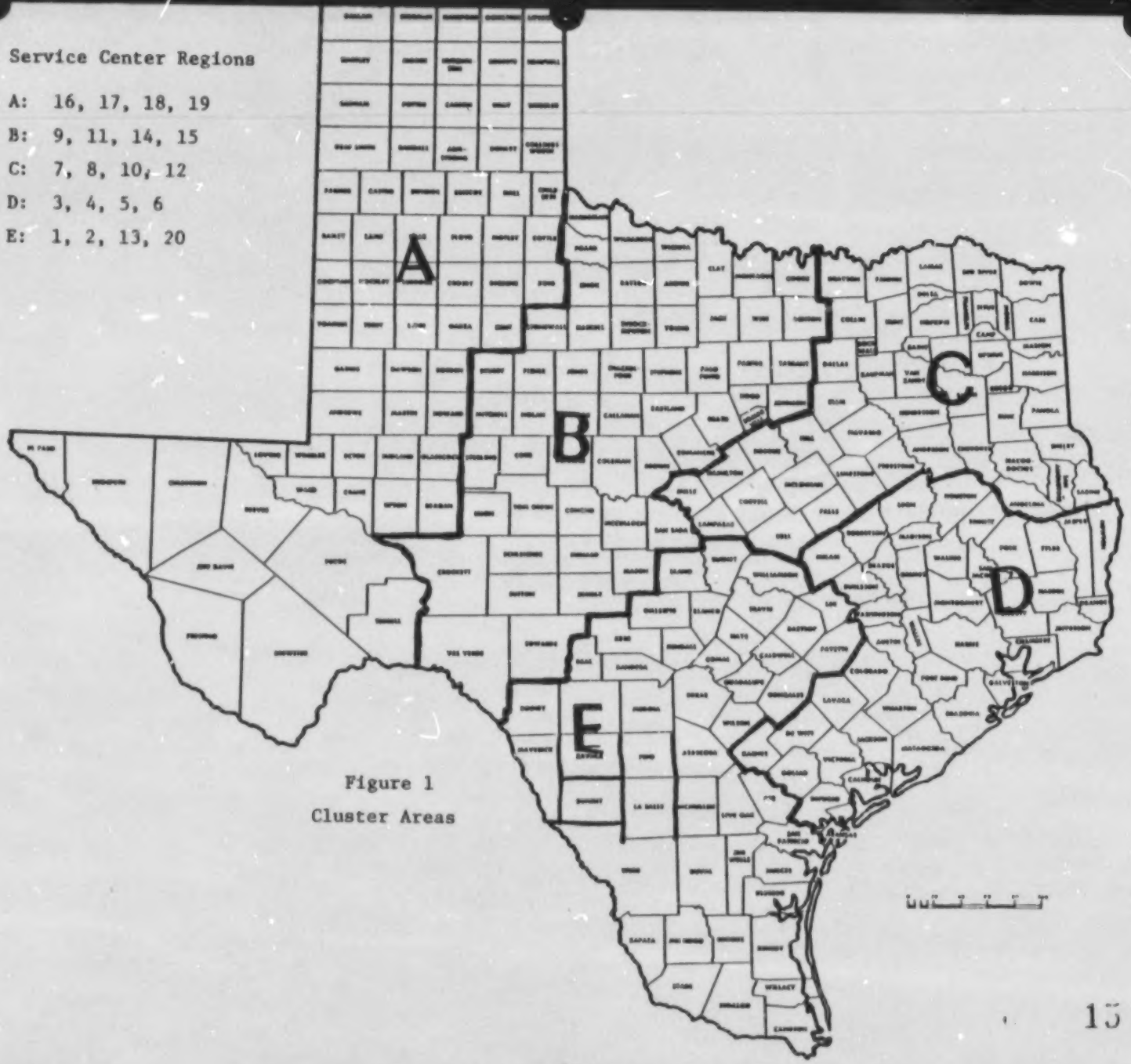


Figure 1

Cluster Areas

Table 1

Replies of Districts According to ADA Category and Service Delivery Coordination Cluster

Cluster	ADA Category 1	2	3	4	5	Total
A	4	1	3		3	11
B	11	3	8		2	24
C	4	7	10	1	6	28
D	2	3	10	2	4	21
E	3	5	8		2	18
Total	24	20	38	3	17	102

view and observation procedures. This conversation typically included a discussion of the criteria for observation, the interview and observation process, the time involved in the visit, any changes in the contact person or visitation date, and specific directions to the visitation school. If the date or contact person were changed, a letter confirming this change was sent to the contact person. This procedure was followed prior to each subsequent observation visit.

A standard interview procedure was established after pilot field interviews and was used consistently from district to district. In each district the project supervisor initially met with the contact person to discuss the project objectives, expected outcomes, and the extent of pariticipation necessary from the school district. The contact person then introduced the project supervisor to the two vocational instructors who each instructed two handicapped students and were scheduled to participate in the project. The project supervisor then conducted a detailed interview with each vocational instructor. This interview was concerned with the vocational education program in the district and the vocational instructor's general information pertaining to the various aspects of including handicapped students in regular vocational education classes. This initial interview usually lasted from one to one and a half hours. The vocational instructor was guaranteed anonymity before the interview and this appeared to reduce the level of anxiety considerably. The vocational instructors were all interviewed individually, and there were no other personnel present. The interview form is located in Appendix B. This form was completed by the project supervisor during the interview. After each interview, a thank you letter was sent to the contact person and the vocational instructor interviewed.

Observation of Vocational Classrooms

Utilizing the Fair Vocational Observation System, which was designed to provide a framework for observing and recording the vocational classroom interaction between the vocational teacher and the handicapped student and between the handicapped student and nonhandicapped students the project supervisor observed and systematically recorded three separate classroom observations which were conducted from January through May. Nine different vocational areas were observed. These were vocational agriculture, home economics, welding, auto mechanics, meat processing, horticulture, CVAE general construction trades. During these observations the project supervisor's task was to observe the handicapped student/vocational instructor, and handicapped student/nonhandicapped student interactions and record only those observable behaviors listed on the observation form that occurred during a specific time segment. The project supervisor was seated or stood unobtrusively in the laboratory or classroom in a position to observe both the vocational instructor and the handicapped student. The vocational instructor/handicapped student interactions were observed and recorded simultaneously. The materials required for the observation were the observation instrument, a pencil, and a stop watch.

The observation period was 36 minutes in length and was comprised of six separate six minute observation and recording segments. During each six minute observation period the observer spent the first three minutes observing the interactions and the second three minutes recording. Only those interactions directly observed during the preceding three minutes of observation were recorded. When the three minute recording period had ended for segment one, the observer immediately began the second three minutes of observation for segment two. This was followed by three minutes of recording for segment two.

This procedure of three minutes of observation followed by three minutes of recording was continued for the remaining four segments of the 36 minute observation period with the observer checking the numerically corresponding box on the form. The observations that the project supervisor made were defined specifically by the project staff based on research of available observation techniques and procedures. Definitions of instructor/handicapped student interaction and handicapped student/nonhandicapped students interactions, the observation form, and detailed procedure for its use are included in Appendix C. The project supervisor observed at least two handicapped students in three separate visits for 36 minutes each in each vocational setting. In some instances, due to absence of the handicapped student or the withdrawal of the handicapped student from the school district, more than two handicapped students were observed, and where time allowed, the project supervisor observed three handicapped students for 36 minutes each on three separate occasions throughout the year.

Data Analysis

The data were analyzed separately for the vocational instructor interviews and the observations. The analysis of the responses from the interviews consisted of tallying the similar responses, and computing the frequency and percent for each response. Questions in which responses were varied were coded into typical response groups, and frequencies and percents were then computed.

The analysis of the data from the Fair Vocational Observation System is slightly more complex. For items numbered 1,2,3,4,5,6,18,20,21,22,23,24,29, and 30 the analysis consisted of tallying the yes or no responses and computing the frequency and percent. The analysis of the data from the items with

recording squares consisted of computing the sum of observations from the six observation periods for each contingency of the item. The sum for each contingency for each observation visit was then summed for all of the observation visits. This sum was compared to 678, the total of observation periods that occurred, and the percent of frequency was computed. The maximum total of observation periods was (11) (2) (3) (6) which equals 792. This represents eleven districts, two instructors per district, two handicapped students per instructor, three observation visits, six observation periods per visit. As a result of student absences and other circumstances, the total of observation periods that occurred were 678. This basic data from the Fair Vocational Observation System is included in Appendix D. Further analysis of these data by combining items and contingencies was conducted and will be discussed in the Results Chapter.

Results

The purpose of this study was to investigate empirically the instruction of special education students in regular vocational education programs. These data were obtained from observations in 22 vocational settings. Table 2 presents a distribution of the observed vocational programs according to ADA category. These vocational settings consisted of eight pre-employment labs, five CVAE programs, and seven home economics and two agriculture programs. The number and type of CVAE programs were two office duplication processes, two general construction trades, and one general mechanical repair. The pre-employment labs consisted of three welding, two meat processing, one horticulture, and two auto mechanics. The findings of this investigation are reported below in accordance with the five objectives of the study and a detailed description of nine vocational settings is included.

Objective 1: To observe and describe the handicapped student/vocational instructor interaction in regular vocational education programs.

The description of this interaction involves the nature of the environment in which it takes place. The size of the vocational classes varied from district to district and from program to program. From data reported by the vocational instructors, the median class size was 13 with a median of 3 handicapped students per class. The vocational instructors reported that the majority of the handicapped students were classified as learning disabled (LD). Two deaf students and one student confined to a wheel chair because of cerebral palsy were also reported. When asked to describe the handicapped students included in regular vocational programs, the vocational instructors stated that communication skills, reading, math, and written work were below

Table 2

Distribution of Observed Vocational Programs

Program	ADA Category 1	2	3	4	5
Agriculture	2	-	-	-	-
Home Economics	2	1	2	-	2
Welding	-	1	1	-	1
Horticulture	-	-	-	-	1
Auto Mechanics	-	1	-	-	1
Meat Processing	-	-	1	-	1
CVAE General Mechanical Repair	-	-	-	1	-
CVAE Office Duplication Practices	-	-	1	1	-
CVAE General Construction Trades	-	1	1	-	-

grade level. Table 3 presents responses and respective percents for the vocational instructors related to Objective 1.

Ninety-one percent of the vocational instructors reported that their class was organized as a large group with the handicapped students participating fully in that group. Eighty-seven percent reported that the handicapped students functioned totally as a part of the large group and were not given any differential treatment. A majority of 55% of the vocational instructors stated a positive philosophy toward mainstreaming. Examples of positive statements included: "concrete experiences result in success", "it is good for social interactions", "they can learn hands-on activities and be successful in job placement", "they excel at their own speed", and "if one child learns a skill, it is worth every cent spent". Examples of those responses that were not as highly positive toward mainstreaming handicapped students in vocational education were: "it was not a dumping ground", "do not wait until high school for vocational placement", "more vocational skills are needed at an earlier age", "special education students should be put together in classes", and "it is difficult to individualize with a class of 30".

The vocational training and teaching experience of the vocational instructors varied considerably. Sixty-three percent had five years or less experience, ten percent, six to ten years experience, and 26%, 11 or more years of teaching experience in the vocational setting. Sixty-one percent of the vocational educators stated that they had had no specific training or experience in working with handicapped students. Forty percent stated that they had attended specific in-service concerning the mainstreaming of handicapped students into the regular classroom. A majority of the vocational

Table 3

Responses of Vocational Instructors

Related to Objective 1

Response	Percent of Response
1. Teaching experience	
a. 0-5 years	63%
b. 6-10 years	10%
c. 11 or more years	26%
2. Professional training for instructing handicapped students	
a. None	61%
b. Inservice	40%
3. Prior teaching experience with handicapped students	
a. Yes	78%
b. No	22%
4. Expectations for handicapped students	
a. Individually derived for each student	39%
b. Same for all students	35%
c. Lower for handicapped than nonhandicapped students	17%
d. No expressed expectations	9%

Table 3

Responses of Vocational Instructors

Related to Objective 1 (Continued)

Response	Percent of Response
5. Expectations for future of handicapped students	
a. Employed as laborers	44%
b. Employed	33%
c. Not Employed	16%
d. No response	7%
6. Assignment of grades for handicapped students	
a. Same as nonhandicapped students	35%
b. Individual approach for handicapped students	65%
7. Attitude toward handicapped students	
a. Negative effect of budget	91%
b. No opinion related to budget	9%
c. Modifications in equipment, educational materials, and instruction adaptations should be made	78%
d. General positive philosophy	55%
e. Participation of handicapped students in vocational club	87%

instructors, 78%, stated that they had previously instructed handicapped students in a vocational setting. When asked at what level they expected the handicapped students to perform in the vocational setting, 39% stated that all students, handicapped students included, worked on an individual basis. Thirty-five percent stated that their expectations were no different for the handicapped student. Sixty-five percent of the vocational instructors reported grading the handicapped students individually according to ability and attitude. Thirty-five percent of the vocational instructors stated that the students were graded with the rest of the class and no special dispensations were made for the handicapping condition. A majority, 77%, of the vocational instructors stated that they expected the handicapped student to be working after graduation. Vocational instructors in the welding, auto mechanics and horticulture pre-employment labs reported that the handicapped students were presently employed in the area in which they were being trained and would continue to work in that area and make a substantial income after graduation. The handicapped students were also reported to be participating fully in the vocational clubs. Eighty-seven percent of the vocational instructors reported that the students not only participated but also held offices and had won district and state awards in vocational club competitions.

For the most part, the observational data verified the comments of the vocational instructors, but it also provided additional information. It was observed that the vocational instructor (VI) did not subdivide the class and directed the handicapped students to participate with the class as a whole during 96% of the observations. When the handicapped students were working at a specific task as part of the group, they were working independently 89% of the time. This means that the handicapped students were functioning as a

part of the whole group as independent students and not requiring individual help from the instructor, a peer tutor, or other personnel during 89% of the time that instruction was observed.

For observational purposes, instruction was divided into four categories. These categories were lecture, concrete experiences, representational experiences and abstract experiences. Lecture was defined as addressing discourse on a topic pertaining to the subject matter to the class as a whole. When providing a concrete experience the vocational instructor created an environment in which the handicapped student could manipulate and/or explore learning materials or experiences to aid in learning the subject matter. The representational experiences provides the handicapped student with pictures, graphs or illustrations to aid in learning the subject matter. An experience was defined as abstract if it consisted of verbal or printed information supplied to assist the handicapped student. Table 4 presents the observed types of instructional interactions. The vocational instructors utilized concrete experiences 48% of the time that the instruction could be categorized using these four designations. The use of concrete experiences resulted in the highest level of participation by the handicapped students. When concrete activities were utilized for instruction, the handicapped students were actively participating in the concrete activity 98% of the time. The second highest level of participation, 88%, was seen when representational experiences were utilized by the vocational instructors. This occurred in 16% of the observations of vocational instruction. The level of participation drops to 80% with both lecture, which was utilized 25% of the time, and abstract experiences, which was utilized 11% of the time.

Table 4

Observed Types of Instructional Interactions

Interaction	Percent Observed	VI+/HS+	VI+/HS-
Lecture	211 25%	168 80%	43 20%
Concrete Experiences	404 48%	395 98%	9 2%
Representational Experiences	138 16%	121 88%	17 12%
Abstract Experiences	89 11%	71 80%	18 20%
Total	842		

NOTE:

VI+: Vocational instructor provides

HS+: Handicapped student participates or responds

HS-: Handicapped student does not participate or respond

Two categories of instructional variables that were observed have been labled static and management. The static instructional variables included whether the class was a laboratory or classroom setting and the existence of additional personnel to assist with instruction. Table 5 presents the frequency and percents for these variables. Management instructional variables included the grouping pattern that was used and the differentiation between a formal or casual instructional approach. Table 6 presents the frequency and percents for these variables. For purposes of observation, classroom management was termed either formal or casual. The casual management mode was defined as the vocational instructor discussing the subject matter with the class as a whole, with the handicapped student or with a small group and encouraging and allowing class input. In a formal management setting the vocational instructor did not allow or encourage class discussion or interaction. The management style in the vocational setting that was generally observed was of a casual nature. During 81% of the observations, the vocational instructors encouraged interactions and discussions and approached the subject matter in an informal way. The vocational instructors were observed to have a very genuine rapport with all the students. During 19% of the observations, the vocational instructor was lecturing to the class and did not allow or encourage class discussions or interactions. This formal type of management style was observed more in homemaking and agricultural classes than in any other vocational settings.

Observations of other instructional interactions of handicapped students in the instructional activity were also obtained. Handicapped students were actively participating in the instructional activity without encouragement of any sort from the vocational instructor 67% of the time. Twenty-seven per-

Table 5

Observed Static Instructional Variables

Variable	Frequency
Laboratory Setting	372 55%
Classroom Setting	300 44%
Utilization of peer tutor	6 19%
Utilization of teachers aide	0 0%
Utilization of additional personnel	30 4%

Table 6

Observed Management Instructional Variables

Variable	Frequency
HS is grouped with nonhandicapped students	98% 666
HS is placed at work station as a part of the class	660 97%
HS is placed at work station in an isolated spot in classroom	6 1%
Formal instructional approach	126 19%
Casual instructional approach	552 81%

NOTE:

HS: Handicapped Student

cent of the time they participated with encouragement from the instructor. In total, the handicapped students were actively participating in instructional activities, with or without the encouragement of the vocational instructors, 92% of the time that instructional activities were observed. Table 7 presents the other instructional interactions that were observed. These data demonstrate that, for a majority of the time, 73%, that the handicapped students were participating in an instructional activity they did not ask for clarification of information, recommendations, communication on task, and additional help. The percents vary from 63% to 78%. Clarification of information occurred when the handicapped student displayed a lack of understanding through facial expressions or verbal statements, and the vocational instruction then provided more information. When the vocational instructor advised the handicapped student on possible actions relating to class procedure, student behavior or subject matter these statements were defined as recommendations. Communication on task consisted of the vocational instructor speaking to the handicapped student concerning the subject matter. Additional help was defined as the vocational instructor providing the handicapped student with a peer tutor, teachers aide, clarification, instructor attention, or additional information. The communication on task data shows that the initiations of communication on task were almost equally divided between the vocational instructor initiating the on task communication and the handicapped student initiating the on task communication. Fifty-six percent of the on task communications were initiated by the vocational instructors and 42% by the handicapped students. In the category of additional help to the handicapped students it had not been requested by the handicapped students. In these instances the

Table 7

Observed Other Instructional Interactions

Interaction	Frequency	HS+/VI+	HS+/VI-	HS-/VI+
Participation	629 93%	168 27%	453 72%	8 1%
Clarification	146 23%	141 97%	-	5 3%
Recommendations	186 27%	179 96%	-	7 4%
Orders	70 10%	62 89%	-	8 11%
Communication on task	252 37%	146 98%	-	6 2%
Additional help	146 22%	114 78%	-	32 22%

NOTE:

VI+: Vocational instructor encourages or initiates

VI-: Vocational instructor does not encourage or initiate

HS+: Handicapped student participates, responds or requests

HS-: Handicapped student does not participate, respond or request

additional help had been initiated by the vocational instructors. The vocational instructors did not use other students or paraprofessionals to assist the handicapped students during 96% of the observations. When additional help was observed, it was in the form of unstructured peer assistance.

In the affective areas of instruction communication on a general topic and social and emotional interactions were observed. Table 8 presents observed affective interactions. Communication on a general topic was defined as any topic other than classwork; this included stating opinions, feelings, and preferences. Positive social or emotional interactions consisted of the vocational instructor directing supportive statements or actions toward the handicapped student, or visa versa, which have positive connotations such as acting friendly, praising, approving, encouraging, rewarding or joking. Negative social or emotional interactions included negative statements or actions such as belittling, insulting, discouraging, laughing at or expressing fear, anger, hostility, disappointment, displeasure or unhappiness. When positive social or emotional interactions were observed, 59% of the time these interactions were initiated by the vocational instructors and 40% were initiated by the handicapped students. On an average, 60% of the positive communications and social interactions between the vocational instructors and handicapped students were initiated by the vocational instructors and 39% were initiated by the handicapped students. Virtually no negative social interaction or negative communication between the vocational instructors and handicapped students were observed.

Table 8

Observed Affective Interactions

Interaction	Frequency	VI+/HS+	VI-/HS+	HS+/VI+
Communication on a general topic	120 18%	73 61%	1 1%	46 38%
Positive social or emotional interaction	232 35%	138 58%	2 0%	92 41%
Negative social or emotional interaction	18 3%			

NOTE:

VI+: Vocational instructor initiates

HS+: Handicapped student initiates

HS-: Handicapped student does not initiate

Objective 2: To observe and describe the handicapped student/ nonhandicapped student interaction in regular vocational education programs.

When asked to describe the general interaction of the nonhandicapped and handicapped students in the vocational setting and during related activities, 83% of the vocational instructors reported that the handicapped and nonhandicapped students interacted very well. Thirteen percent stated that student interaction depended on the personality of the individual student either handicapped or nonhandicapped. In general, the great majority of the vocational instructors stated that all of the students interacted well together and that the nonhandicapped students did not isolate the handicapped students from social or instructional interaction in the vocational setting. All of the pre-employment lab instructors stated that the class interacted well together and that this interaction was based upon the individual student's personality rather than upon designation of handicapped or nonhandicapped.

When student interactions between the handicapped and nonhandicapped students were observed, on the average, 53% of the time the handicapped students initiated on task communication, requests for additional help or positive social interaction and the nonhandicapped students responded. Table 9 presents handicapped student/nonhandicapped student interaction. Similarly, 46% of the time, the nonhandicapped students initiated the on task communication, requests for additional help or positive social interaction and the handicapped students responded. When this was analyzed according to the areas of communication, additional help and positive social or emotional interactions, 57% of the time the handicapped students initiated the communication and 42% of the time the nonhandicapped students initiated the communi-

Table 9

Observed Handicapped Student/Nonhandicapped Student Interactions

Interaction	Frequency	HS+/NHS+	NHS+/HS+	HS+/NHS-
Communication	343 51%	196 57%	144 42%	3 1%
Additional Help	206 31%	101 49%	100 49%	5 2%
Positive Social or Emotional Interaction	360 54%	190 53%	168 47%	2 1%
Negative Social or Emotional Interaction	28 4%	N/A	N/A	N/A
Disruptive or Inappropriate Behavior	18 3%	N/A	N/A	N/A
Inappropriate Behavior on Task	109 16%	58 53%	30 28%	21 19%

cation. Forty-nine percent of the time the handicapped students requested additional assistance from the nonhandicapped students and on an equal basis, 49% of the time, the nonhandicapped students were requesting assistance from the handicapped students. Therefore, when requests for on task assistance for additional help were observed, they were equally divided between the nonhandicapped students and the handicapped students requesting assistance and supplying assistance to each other. When positive social or emotional interactions were observed, 53% of the time the handicapped students initiated this interaction and 47% of the time the nonhandicapped students initiated this interaction. Positive social and emotional interactions were occurring the majority of the time in the vocational setting between the handicapped and the nonhandicapped students. There were virtually no negative social or emotional interactions, disruptive or inappropriate behaviors, or inappropriate behaviors which were not on task. When negative social or emotional interactions, disruptive or inappropriate behaviors, or inappropriate behaviors on task were observed, 8% of the time, they were initiated almost equally by handicapped and nonhandicapped students.

Objective 3: To describe the development and implementation of the individual education plans (IEP's) for handicapped students in regular vocational education programs.

Virtually all, 87% of the vocational instructors stated that they did not have a copy of the handicapped student's IEP and did not know of or had not seen the IEP. Table 10 presents the responses of the vocational instructors that are related to Objective 3. All, 100%, stated that they had not participated in writing the IEP. When asked if they had attended the ARD

Table 10

Responses of Vocational Instructors

Related to Objective 3

Response	Percent of Response
1. Possession or knowledge of IEP	
a. Yes	13%
b. No	87%
2. Attendance at ARD/IEP meeting	
a. Yes	59%
b. No	40%
3. Participation in writing IEP	
a. Yes	0%
b. No	100%
4. Administration of vocational assessment	
a. Yes	13%
b. No	74%
c. Do not know	13%
5. Use of vocational assessment	
a. Yes	0%
b. No	0%
c. Do not know	100%
6. Cooperated with special education teacher	
a. Yes	26%
b. No	74%

meeting, 59% replied positively and 40% replied negatively. Also, 100% stated that they did not know how the results of the vocational assessment had been utilized. Seventy-four percent stated that a vocational assessment was not given, 13% stated that one was given, and 13% stated that they did not know if a vocational assessment was administered to the handicapped student. When asked if they had met with or worked in any way with the special education teacher, 74% of the vocational instructors stated that they had not. At no time were vocational instructors observed referring to an IEP or any adaptations written in an IEP.

Objective 4: To describe instructional adaptations and modifications that can be defined as excess costs for funding purposes. In a majority of settings, the physical characteristics of the vocational classrooms had not been changed to accomodate the needs of the handicapped student. Table 11 presents the responses of the vocational instructors that are related to Objective 4. Eighty-seven percent of the vocational instructors stated that they had not made any changes because they were not needed. When changes were made, these consisted of changing seating arrangements, moving chairs to provide space for students in wheel chairs, marking electrical tools to signify when the current was on for deaf students, and utilizing only specific kitchen utensils for blind students. Although modifications in the physical environment of the vocational setting were not utilized extensively, 78% of the vocational instructors stated that they had made instructional modifications. These specific modifications cannot be defined as excess costs for funding purposes. The instructional modifications consisted of: grading on ability, learning by doing, administering tests orally, indi-

Table 11

Responses of Vocational Instructors

Related to Objective 4

Response	Percent of Response
1. Modifications in physical environment for accomodation of handicapped students	
a. Needed	13%
b. Not needed	87%
2. Types of modifications reported for handicapped students	
a. Modify grading procedures	21%
b. Emphasize learning by doing	33%
c. Administer tests orally	19%
d. Modify content of instruction	29%
e. Individualized approach	10%
f. Utilize peer tutor	13%
3. Use of teachers aid or peer tutor	
1. Yes	13%
2. No	87%

vidualizing assignments, assigning lower level tasks, individualizing assignments and specific skills to be taught the handicapped student, and providing concrete examples of tasks and skills rather than assigning written or reading work. The vocational instructors reported that they implemented these instructional modifications with very little or no use of peer tutors or teacher's aids. Eighty-seven percent of the vocational instructors stated that they did not utilize any form of teacher's aides or peer tutors. When a peer tutor was utilized, it was done on an informal basis as needed rather than in a structured program. None of the vocational instructors reported having a teacher's aide.

Objective 5: To develop recommendations for more effective instruction of handicapped students in regular vocational education programs.

The vocational instructors made numerous suggestions for improving the vocational education of handicapped students mainstreamed into regular vocational education classes. These suggestions included: smaller classes, teaching more survival skills and hands-on activities, earlier entrance into vocational programs for handicapped students, a need for more information from special education to vocational education, grouping or levels of instruction, adaptations in grading, more funding, and more specific delineation of present guidelines. Table 12 presents the responses of the vocational instructors that are related to Objective 5.

Forty-eight percent of the vocational instructors interviewed stated that their greatest instructional need was more materials and 17% stated that smaller classes and more information from special education were the greatest instructional needs. Seventy percent of the vocational instructors stated

Table 12

Responses of Vocational Instructors

Related to Objective 5

Responses	Percent of Response
1. Most effective instructional technique	
a. Concrete	70%
b. One-to-one	26%
c. Others	4%
2. Least effective instructional technique	
a. Reading and Written assignments	68%
b. Oral directions	23%
c. Lecture	9%
3. Greatest instructional need	
a. Materials	48%
b. Smaller classes	17%
c. Information from Special Education	17%
d. Instructional teacher aides	89%
e. Others	

NOTE:

The range of recommendations included smaller classes, emphasis on survival skills and "hands on" instruction, earlier placement in vocational programs, more information from special education, grouped or leveled instruction, adaptations in grading, more money and guidelines from TEA.

that the most effective instructional technique was the use of concrete materials. Twenty-six percent stated that the use of concrete materials coupled with one-on-one interaction with the student was the most effective instructional technique. The least effective instructional technique, reported by 68% of the vocational instructors, was to utilize reading and written assignments. Twenty-three percent of the vocational instructors stated that oral directions were the least effective and 9% stated that lecture or isolation of the handicapped student was the least effective technique.

Description of Vocational Settings

Nine different vocational areas were observed by project personnel. These were vocational agriculture, home economics, welding, auto mechanics, meat processing, horticulture, CVAE office duplication practices, CVAE general mechanical repair, and CVAE general construction trades. The vocational setting in which the most observations were made was home economics. Seven of the 22 observations took place in a home economics setting. Three observations were made in welding, and two each in vocational agriculture, CVAE office duplication practices, auto mechanics, meat processing, and CVAE general construction trades. One observation was made in CVAE general mechanical repair and one observation in horticulture. A total of 22 separate observations were made in the nine different vocational settings.

The format of the vocational setting varied from district to district. The vocational agriculture and home economics settings generally were structured around lecture activities or a combination of lecture and representational or concrete activities. The pre-employment lab and CVAE settings usually were based on concrete activities. The CVAE and pre-employ-

ment labs strived to replicate the on-the-job environment as closely as possible. Equipment and materials germane to the vocational training area were provided to the students. When the vocational instructors utilized a lecture format, they did not permit or encourage class discussion or interaction. Occasionally during a lecture, representational materials such as slides, hand-outs, or the use of the overhead projector were employed. When the vocational instructors urilized a lecture format. they did not permit or encourage class discussion or interaction. Occasionally during a lecture, representational material such as slides, hand-outs, or the use of the overhead projector were employed. When the vocational instructors utilized concrete activities for instructional purposes, the atmosphere of management was generally casual. In this casual atmosphere, the vocational instructor discussed with the class as a whole or individual students subject matter while encouraging and allowing class input and positive social interaction between the vocational instructor and all students.

Vocational agriculture. Typically, the vocational agriculture classes that were observed consisted of the instructor lecturing to a large group of students. This lecture was, at times, accompanied by notes on the blackboard, slide presentations, or hand-outs. The students were instructed to take specific notes during the lecture. Lectures observed were on the young bean plant, types of chickens, sheep, horses, and soil. One lecture on crops of Texas consisted of a written quiz in which the vocational instructor wrote on the blackboard. The vocational instructor read the questions to the class and the students wrote the answers and labeled a map according to crop areas of Texas. Following the quiz the instructor went over the answers with the class orally and provided alternative answers to the questions. Dur-

ing the lectures, the handicapped students usually were very quiet and appeared to be listening but did not take notes. The lecture format created a classroom atmosphere in which the vocational instructor lectured to the class and the students merely sat and listened. Occasionally the vocational instructor utilized a question and answer format but at no time was an open discussion encouraged. The classroom management tended to be authoritarian on the part of the vocational instructor. There was very little social or emotional interaction observed during a lecture format in the vocational agriculture settings observed. During the lecture format, the handicapped students were not observed to be any more inattentive than the rest of the students in the classroom. When the concrete instructional technique was employed, such as a group constructing expandable hog gates, there was much more interaction both socially and emotionally between the handicapped student and the regular student and between the handicapped student and the vocational instructor. In building the expandable hog gates, the handicapped students participated fully in measuring the lengths of wood, sawing the lumber, and hammering nails to complete construction of the hog gates. During these concrete activities, a more casual atmosphere which encouraged spontaneous input and interaction was observed. All of the students worked together assisting each other and the vocational instructor was in a supervisory role. The vocational instructors in vocational agriculture stated that the handicapped students had great difficulty with the written assignments, taking notes during lecture, and passing written exams. When the handicapped students were observed in the vocational agriculture setting participating in a concrete activity, they did so very successfully.

Home economics. The large number, (7) of observations in the home economics vocational setting provided data from both a lecture format and concrete experience format in the homemaking setting. When a lecture format was observed in the vocational homemaking setting, the vocational instructor lectured to the students the entire period and the students were instructed to take notes. In some instances, the students were provided with an outline of the lecture upon which they were to write their lecture notes. The topics of the lectures observed were child care, meal planning, the color wheel, sewing techniques, marriage, leases, reading blue prints, and table setting. The vocational instructors employed blackboard notes, overhead projectors, slide presentations, and work sheets in conjunction with the lecture in some instances. The students were not encouraged to participate in discussion or in any interaction between the vocational instructor or other students. The handicapped students participated in taking lecture notes to the same extent as the rest of the students in the classroom. In the vocational homemaking setting which utilized concrete experiences for instructional purposes, the vocational instructor discussed with the class as a whole and with all individual students the subject matter and there was a great deal of positive social and emotional interaction. For example, when the students were working individually at sewing machines, the homemaking instructor would rotate from student to student checking on the students' work, inquiring as to the students' needs, interacting socially with the students. The instructor was observed smiling, talking personally, making suggestions, joking, and generally exuding a warm and accepting manner towards all of the students. There was no difference between the vocational

instructor's interaction with the handicapped student and with the nonhandicapped student. During the sewing activity, the vocational instructor would interact with all students as a whole and with individual students while the handicapped and nonhandicapped students interacted on a one-to-one small group basis. All of the students worked together cooperatively and assisted each other with the tasks assigned. It was observed that when a student had a problem with a concrete activity, such as putting in a dart, the vocational instructor at times would ask another student who was capable of assisting the student to function as a peer tutor. This peer tutor in some instances was a nonhandicapped student helping a handicapped student, and in equal instances a handicapped student assisting a nonhandicapped student. During cooking experiences, the students worked in small groups which were chosen by the students themselves rather than by the homemaking instructors. There was no discrimination against the handicapped students and they were integrated into all of the groups and accepted by their peers rather than isolated into one group by themselves. Other concrete experiences observed were preparing a breakfast meal, preparing a luncheon meal, making tee shirts out of stretch material, sewing on individual projects, basic kitchen cleaning, and making creme puffs.

The vocational homemaking instructors all stated that concrete experiences were much more successful than the more academic written and/or reading, lecture, or notebook assignments. When the handicapped students were observed in a lecture situation such as definitions of the parts of a house, types of table setting, definitions of nutrition terms, there was no interaction on the part of the handicapped student. Numerous instances were observed in

which the vocational instructor assigned work sheets to the class in which they were to find the answer in the textbook, copy it down on the work sheet. When this occurred, the handicapped student did not participate fully. In one homemaking setting, a handicapped student confined to a wheel chair because of cerebral palsy was given a tape recorder by the homemaking instructor and he taped the lecture along with taking notes. During a lecture format, the vocational homemaking instructor sustained a formal atmosphere in the classroom with no interaction between the student and the instructor, but when this format was changed to a concrete activity, the vocational instructor and student interaction became casual and informal with numerous positive interactions initiated by both the handicapped student and the vocational instructor.

The homemaking instructor stated that even if the handicapped student were not able to read the complicated recipe or sewing pattern, once they were shown how to complete the concrete activity they were successful. In one instance, numerous handicapped students were being taught a specific commercial sewing skill which they completed very successfully. This allowed these handicapped students to be employable to a large clothing manufacturer within the area. The home economics instructor stated that specific skills which would make the handicapped as well as the nonhandicapped students employable were needed in the home economics program. Other needs stated specifically by the home economics instructors were changes in state guidelines for home economics, more curriculum for variability, more information from the area vocational supervisors concerning working with the handicapped student, and lower level reading materials which were directly related to the home economics curriculum.

Welding. The pre-employment welding laboratories that were observed were managed by the instructors to replicate as closely as possible an on-the-job situation. Heavy welding equipment, torches, metal working tools, drills, presses, and welding boots are examples of the facilities, equipment and tools observed. The instructor assumed the role of the employer and the students assumed the roles of employees. Shop foreman and other employee designations were assigned to the students. The welding instructor stated that the handicapped students performed as well as, and in numerous instances, with greater welding ability than the nonhandicapped students. In one observation, a handicapped student gave a demonstration of up-hill welding which was observed by the rest of the class. The handicapped students participated in all the metal working, bending, cutting, and welding tasks that were assigned to other students. The students supplied these skills to building metal barbecues, trailers, and other metal projects. A number of the handicapped students had won first place designation with these projects in local, district, and state-wide welding competitions. In one vocational welding setting the handicapped student was an officer in the vocational club. A deaf student in one welding class that was observed participated fully in all the welding activities. This was the second year that the student had been in the welding program and he communicated very well through sign language with the instructor and the other students. The instructor and the other students had generated their own communications system for the specific welding tools and welding tasks which they used within the welding setting. In another instance, the handicapped student had obtained his own part time job as a welder outside of the school. The handicapped student was working

quite successfully and planning on attending a technical institute for further welding training. The welding instructor stated that the handicapped students were treated no differently than the nonhandicapped students. All of the students worked independently with the vocational instructor giving occassional directions and answering the students' questions. The instructors stated that what mattered was the final welding skill level of the student and the ability of the student to obtain and retain a job rather than the academic skills which the student lacked. The atmosphere of management was generally casual. In this casual atmosphere the vocational welding instructors encouraged interaction between the students and between the students and the instructor. The welding instructors stated that it was extremely important to them to have all information possible concerning all of the students in order for them to best serve those students. The vocational instructors stated and it was observed that the on-the-job experience and background of the vocational welding instructors had given them the opportunity to realize and experience that the person's welding ability on the drilling rig rather than his reading level were what were important to the employer. This accepting atmosphere was conducive to the friendly interactions observed between the vocational instructor and the handicapped student and between all of the students. It also appeared to create a situation in which the handicapped student felt very confident of his ability. In numerous instances, the handicapped student was observed initiating his own task with no instruction or encouragement by the welding instructor. The welding instructor stated that all of the students used all of the equipment in the welding setting and that there had been no safety problems.

Auto mechanics. In the pre-employment auto mechanics laboratory settings the vocational instructors also managed the vocational setting as a shop. The shop contained all the necessary tools and equipmment for training in auto mechanics. The students were assigned specific roles as employees such as shop foreman, and the instructor basically assumed the role of employer. The instructor was observed working with the students on personal appearance, job attitude, job interviews, and basic fundamentals on interacting between employers and employees. All of the students in the auto mechanics class were working on different assignments such as repairing carbureators, dismantling engines, replacing brakes, and performing basic tune-ups. This was done in small groups, and also individually. The vocational instructors in the auto mechanics lab stated that they assigned the various tasks based on the student's skill level and that the handicapped students did not necessarily function as a lower level and in many instances functioned at a higher skill level than the nonhandicapped student.

When a student, be they nonhandicapped or handicapped, could not function on a high skill level, the vocational instructor assigned a specific lower level task to that student to learn. The vocational instructor stated that this enabled the student to learn a specific marketable skills such as wheel alignment which enabled him to be hired. The vocational instructors also stated that they believed that it was extremely important to teach the handicapped student specific skills in which he could become expert in order to enable the handicapped student to find employment. The auto mechanics instructors named various specific skills in which the handicapped or nonhandicapped student could be specifically trained, such as wheel balancing, basic alignment, and basic tune-up tasks such as changing oil. The auto mechanics

instructor stated that the handicapped students did not require any more instructor time than the nonhandicapped students or cause any social problems in the vocational setting. The instructors stressed that the personality of the individual student, nonhandicapped or handicapped, was the important determining factor rather than the label of handicapped.

They further stated that they believed it was extremely important for the vocational instructor to be completely informed as to which students were handicapped students and what the handicapping conditions meant to the vocational setting. The instructors stressed that they wanted to have as much information as possible about each student in their class in order to best instruct that student as an individual person. The atmosphere in the auto mechanics lab was casual with the students all getting along well, and interacting in a very friendly open manner with the instructors. During various observations the students and vocational instructor engaged in group discussions concerning a problem that had occurred in the school setting or outside the school setting which was applicable to the auto mechanics field. All students participated in the group discussion and the vocational instructors accepted the students' opinions and suggestions for problem solving.

Meat Processing. In this pre-employment laboratory setting the handicapped students were functioning as well as, and in some instances, more skillfully than the nonhandicapped students. The top student in one meat processing class that was observed was a handicapped student. He had been in special education throughout his whole school career because of reading and math difficulties. The student was also working part time at a meat processing plant in the area and was planning on working full time at the meat processing plant after graduation. The meat processing laboratories were run as a job

setting. The students were required to follow all of the health and safety regulations that apply to a regular meat processing plant. The large equipment for cutting and grinding meat and the large freezers and coolers, knives, and saws and other equipment necessary for processing meat were all present.

All of the students worked individually on their tasks and together as a group to process the meat by cutting, shaping, and wrapping it and storing it in the freezers and coolers. During the observations, the vocational instructors gave only limited directions to all of the students. The students were observed cutting hind and fore quarters of beef and then wrapping this processed meat, grinding meat for sausage, sawing meat, cutting meat, trimming meat and the other various skills which are necessary in meat processing. During another observation, the vocational meat processing instructor demonstrated how to cut a whole hog into parts naming each of the parts as he progressed and asking the students questions about what he was doing. The students all participated fully in the discussion and then proceded on their own to finish cutting the whole hog into parts and processing the meat again by cutting, sawing, trimming, shaping, grinding, wrapping and storing. The students were observed working cooperatively together and assisting each other as necessary. The instructors were observed utilizing oral testing techniques rather than written tests. The vocational instructors stated that while the handicapped students might have difficulty in the regular vocational agriculture class due to reading, writing and math assignments dealing with weights, measurements or chemical properties of, for example fertilizer, the handicapped students were successful with hands-on tasks in the meat processing lab setting. The meat

processing instructors also stated that even though the high powered saws and extremely sharp knives were used by all students there had never been any problems with safety. The handicapped students were observed using very sharp knives, meat slicers, power saws, and sausage grinders. The only evidence observed that the handicapped students needed any extra assistance in the lab was a listing of the labels that were written on packages of meat such as sirloin, flank, or ground round. These were posted on the wall so that the handicapped students as well as the nonhandicapped students would know how to correctly spell and write the label on the package. The meat processing instructors stated that the handicapped students could be very successful in learning this skill and be employable very easily in the community as a butcher or in a large meat processing plant with lower level skills. One of the meat processing instructors pointed out the fact that the handicapped student was the top student in his class and had the potential to make more money in his job at the meat processing plant that the vocational meat processing instructor was presently making.

Horticulture. The vocational horticulture course was taught in both a laboratory and classroom setting. The lab setting was a totally equipped, completely filled with plants greenhouse. The vocational instructor in horticulture stated that the handicapped students had some problems with the involved mathematics, computing strengths of fertilizer, but they had no problems whatsoever when working in the greenhouse setting. In the classroom setting the handicapped students were observed orally reviewing and orally being retested by the vocational instructor so that they could pass a test on types of plants and the strengths of fertilizer to be used on the specific plants. The vocational instructor reviewed the exact material to be

tested and then tested the handicapped students orally while giving the nonhandicapped students a written test. In the greenhouse setting the handicapped students were observed potting plants, fertilizing, preparing seedbeds, pruning, watering the plants, and participating in a greenhouse plant sale.

The vocational instructor stated that one of the handicapped students worked part time for a local nursery and was planning to go to work full time this summer for that same nursery. The instructor further stated that the hands on experiences were very successful for the handicapped students. The handicapped students were observed performing all of the same tasks as the nonhandicapped students. The interaction between the handicapped students and the nonhandicapped student and the vocational instructors and the students was of a casual nature. The students were observed talking about specific tasks, assisting each other with the tasks, and interacting in an open and friendly manner.

CVAE General Mechanical Repair. Both laboratory and classroom settings were observed in CVAE General Mechanical Repair. The vocational instructor in general mechanical repair stated that the handicapped students had some difficulty in reading the technical manuals and calculating the mathematical problems required by the course. During observations in the classroom settings the handicapped students did not participate in the lecture. During the lecture, discussion was discouraged and there was little or no interaction between the vocational instructor and the students. The vocational instructor drew illustrations on the board such as a spark plug, and referred to specific examples in technical manuals. The handicapped students partici-

pated as fully as the nonhandicapped students during the lectures. During the observations in the laboratory setting, the handicapped students were observed working on engines and successfully participating in the concrete experiences. The labs were equipped with lawn mower engines and other small engines which the students were required to completely disassemble, repair and rebuild.

The vocational instructor in general mechanical repair stated that it was important to teach the handicapped students a specific skill at which they could excel in order to be successfully placed on the job. The vocational instructor also stated that the material in the technical manuals was at a very high reading and math level which was difficult for the handicapped students to understand. The instructor recommended that the manual be broken down into vocabulary and math skills which could be taught in the resource room. The general tone observed during the lectures was very formal with the vocational instructor, who had a military background, using an authoritarian approach to teaching the specific skills necessary for small engine repair. This attitude was not observed during the laboratory experiences. When the students were working on engines the vocational instructor was observed interacting in a very open and friendly manner with all of the students and the students interacted in a like manner with each other.

CVAE General Construction Trades. The observations in CVAE General Construction Trades took place in two very different settings. In one setting the observations were made in a large and fully equipped shop which contained saws, drills, and all of the equipment necessary in basic construction. The second setting was outdoors where the CVAE General Construction Trades stu-

dents were building a storage shed. The shed was constructed of cement bricks, roofed, and electrical wiring installed. In both settings, the handicapped students were participating fully in the activities. The activities consisted of sawing wood, constructing gun racks, small cabinets, and similar projects. Both CVAE instructors stated that the handicapped students did not present a safety problem with using the large saws and other heavy equipment. The large shop was run in a very business like manner with students being assigned specific duties such as shop foreman, tool room foreman, and clean-up foreman. In observing these students building the storage shed, the handicapped student was observed working in small groups with nonhandicapped students and being assisted with measurement and mathematical calculations concerning amounts of cement and water to place in the cement mixer by fellow group workers. The building trades instructor stated that the math and reading skills necessary in construction work need to be taught in the resource room.

The vocational instructors also stated that lower level reading materials need to be produced for use in the CVAE General Construction Trades class. Both in building the storage shed and working in the shop the handicapped students were observed participating fully in all activities. The activities observed were mixing cement, laying bricks, installing electrical wiring, sawing large lengths of wood, building a sun deck, and basic clean-up. The CVAE General Construction Trades instructors were observed interacting in a very open and friendly manner with all of the students. The handicapped students and the nonhandicapped students were observed in the general construction trades classes to be working together cooperatively and interacting both socially and emotionally.

The students assisted each other without prompting by the vocational instructor in moving the cement block bricks, measuring whether the wall was plumb, deciding if the cement was the proper mixture, and other activities which they participated in to build this storage shed. The project personnel observed the storage shed being built from the bare foundation to a completed roofed and wired building by the end of the school year. It was observed that all of the students were very proud of their building skills.

CVAE Office Duplication Practices. The settings in which these observations took place were basically classrooms which contained office duplication equipment. This equipment consisted of calculators, duplicating machines, colators, typewriters, adding machines, laminating machines, paper cutting machines, and other office machinery. The handicapped students in these settings were observed operating all of the office machinery. The office duplication practices instructors stated that the handicapped students operated the machines well, and that the only areas in which the handicapped students had problems were in specific written work which was required in the course.

The vocational instructor was observed giving the handicapped student lower level tasks such as running the mimeograph machine while the nonhandicapped students were completing higher level tasks such as typing the high school newspaper. The vocational instructors were observed assisting all of the students when they requested help and working independently with the handicapped students on specific tasks. The vocational instructors utilized both lecture and concrete experiences as an instructional format. During the lecture, it was observed that discussion was not encouraged and there was little interaction between the vocational instructor and the handicapped stu-

dent. One of the lecturers observed concern using the telephone book and the lecture was followed by a written assignment which used the telephone book. The handicapped students did not complete the written work that was given for the telephone book lecture. During the lecture it was observed that discussion was not encouraged and that there was little interaction between the handicapped and the nonhandicapped students. During the concrete experiences, the handicapped students were observed participating fully and positively interacting both socially and emotionally with both the vocational instructor and the nonhandicapped students.

In both settings it was observed that all of the students were assigned specific tasks to complete during each class period. It was also observed that the handicapped students were successful in operating all of the office machines that they were assigned to operate by the instructor. The vocational instructor stated that after the office duplication processes experience the handicapped student should have enough skills to work in a small print plant, or in a setting such as a copy shop.

Discussion

Objectives

Objective 1 was to observe and describe the handicapped student/ vocational instructor interaction in regular vocational education programs. Analysis of the observation data supports the statements made during the indepth interviews of the vocational instructors. In the area of instruction, 91% of the vocational instructors interviewed stated that their classes were organized as a group with the handicapped student participating fully within this group. During observations, 96% of the time that instruction was observed the class organized as groups with the handicapped students fully participating within the groups. Eighty-seven percent of the vocational instructors stated that the handicapped students participated independently as part of the group and 89% of the time that instruction was being observed this was occurring. The statements by the vocational instructors concerning the use of additional personnel in the form of teachers aides or peer tutors were also supported through observation. Eighty-seven percent of the vocational instructors stated that they did not use a teachers aide, peer tutor or other paraprofessional personnel and in only four percent of the observations was the use of additional personnel in the form of informal peer tutoring observed. The vocational instructor's positive statements of their philosophy towards mainstreaming the handicapped student into regular vocational programs was supported by observations. The vocational instructors expected the handicapped student to participate fully in the instructional activity and 92% of the time that instruction was observed the handicapped student was participating in the instructional

activity. Even though 63% of the vocational instructors had five years or less teaching experience and 61% had no specific instruction in teaching handicapped students, 70% stated that the most effective instructional techniques were concrete experience and 26% stated working individually with the handicapped students rather than lecture or reading and written assignments was most effective. These instructional techniques are recognized by special educators as most beneficial when working with handicapped students. When instruction was observed in the vocational setting, 52% of the instruction involved the use of concrete activities. When concrete activities were being utilized for instruction, the handicapped students were participating 98% of the time in the concrete activity as opposed to a participation level of 80% in lecture and abstract experiences. The vocational instructors who were observed utilizing lecture and abstract instructional techniques stated that these techniques were not effective with handicapped students. Therefore, even without specific training in working with handicapped students, the vocational instructors were utilizing the most effective teaching techniques which resulted in a very high level of participation by the handicapped student in the learning activity.

Again, the positive expectations of the vocational instructors for the future employment of handicapped students, over 77% stated that the students would be employed after leaving the vocational program, resulting in a positive atmosphere for all students in the vocational setting. This attitude of acceptance on the part of the vocational instructors was supported by their statements that they graded the handicapped student individually 65% of the time and on the same level as the rest of the class 35% of the time and considered on an individual basis 39% of the time. At no

time during the observations were handicapped students observed being given a menial task to perform rather than an educationally sound learning activity. The highest level of participation by the handicapped students in the learning activity was observed in the pre-employment labs and the CVAE Programs. In these programs, it was undiscernable which students were the handicapped students. For example, in a welding laboratory all students were working on separate tasks with the instructor monitoring the group as a whole and assisting individual students as necessary. The pre-employment lab and CVAE instructors stated on numerous occasions that the handicapped students were as successful, and in many instances more adept at the hands-on activities, than the nonhandicapped students. The vocational instructor's positive attitudes toward the participation of the handicapped student in the vocational setting were supported by the observations that the handicapped students were participating without any encouragement from the vocational instructor 67% of the time instruction occurred, and 25% of the time the handicapped student was participating with encouragement from the vocational instructor. In total, this amounted to a 92% level of participation by the handicapped student in the instructional activity with or without encouragement by the vocational instructor. The vocational instructors' statements that the handicapped students participated without requiring any more added time or extra help from the vocational instructor than a regular student were supported by the observations that on the average 73% of the time that the students were actively participating in instructional activities they were not requesting clarification of information, recommendations, additional help of communicating with the vocational instructors on task. The handicapped students observed were able to function independently

and successfully in the vocational setting. This was exemplified in the pre-employment and CVAE vocational settings. The utilization of concrete activities and work or on-the-job environmental setting in these programs appeared to be more conducive to success on the part of the handicapped student than the traditional academic settings in the vocational agriculture and home economics classroom. Numerous handicapped students in the pre-employment labs were already utilizing the job skill that they were learning in that vocational laboratory on a job outside of the school setting. The pre-employment vocational instructors, who have experienced the world of work first hand, appeared to make the least distinction between the handicapped and the nonhandicapped students. These pre-employment instructors stressed that all students in their vocational laboratories were expected to perform as though they were on the job. These instructors stated that they had worked side by side with individuals who were not able to read or perform math at an acceptable level but were able to weld, repair a transmission, or butcher meat very skillfully. The pre-employment lab instructors stated that some of their best students were handicapped students, and that these students might not be able to read and write well, but that the handicapped students would be able to earn a substantial living with the skills they learned in a vocational setting.

The affective interaction observed between the vocational instructors and the handicapped students were very positive, as stated by the vocational instructors during the interviews. Thirty-seven percent of the time that interactions were occurring between the vocational instructors and the handicapped students there were no negative social or emotional interactions.

Sixty-one percent of the time that interactions were occurring between the vocational instructors and the handicapped students there were no negative social or emotional interactions. Sixty-one percent of the time that the vocational instructors and handicapped students were conversing on a general topic, those communications were initiated by the vocational instructors. Many vocational instructors utilized an informal management format in the classroom which encouraged interaction, discussion and establishment of a very genuine rapport with all of the students. This management style was utilized in the pre-employment labs and the CVAE labs in order that the vocational setting be representative of an industry or a job than an academic classroom. This style of management was very conducive to the positive interactions between the vocational instructors and the handicapped students. Positive social or emotional interactions were initiated 59% of the time by the vocational instructors and 40% of the time by the handicapped students. This positive social or emotional interaction included supportive statements and actions which had positive connotations such as acting friendly, praising, approving, encouraging, rewarding, joking or laughing.

When interviewed, the vocational instructors stated that the handicapped students participated in vocational clubs 87% of the time. While no club activities were actually observed, the vocational instructors on numerous instances had on display in the vocational settings specific projects that had been completed by the students for contests. Several of the handicapped students had won first place regional and state ribbons in vocational competition. Also, several of the handicapped students were club officers and

were planning on completing further projects for future competition.

Objective 2 was to observe and describe the handicapped student/nonhandicapped student interaction in regular vocational education programs. During the in-depth interview, 96% of the vocational instructors stated that the general interactions of handicapped and nonhandicapped students in the vocational setting was positive. Eighty-three percent of the vocational instructors stated that the handicapped and nonhandicapped students got along very well together. Thirteen percent stated that all of the students got along well together, and that it didn't matter whether the students were handicapped or nonhandicapped, what mattered were the individual personalities of the students. The vocational instructors further stated that the handicapped students were accepted by the other students in the classroom and no differentiation was made among the students themselves. During the observations, 97% of the time the handicapped students were seated or working in an arrangement which placed them in close proximity with all of the other students in the classroom or laboratory setting. This arrangement did not isolate the handicapped students from the other students in the classroom or laboratory setting. It also was conducive to interaction between the handicapped and nonhandicapped students. On the average, 53% of the time that student interactions were observed, the handicapped students initiated either on-task communication, requests for additional help, or positive social interaction with the nonhandicapped students. Forty-six percent of the time or an almost equal amount, the nonhandicapped students initiated the on-task communication, requests for additional help or positive social interaction with the handicapped students. When this student interaction was divided into the three

categories of communication, additional help, and positive social or emotional interaction, it was very interesting to note that the handicapped students requested assistance from the nonhandicapped students 49% of the time and equally the nonhandicapped students requested assistance from the handicapped students 49% of the time. This equal balance of requesting additional help is note worthy. It supports the statements by the vocational instructors that the students did not discriminate against the handicapped students. The nonhandicapped students were aware that the handicapped students, even though they were not able to read or write as well as the nonhandicapped students, were able to assist the nonhandicapped students with a hands-on technical skill such as welding or repairing a transmission. This appeared to be a direct reflection of the vocational instructor's positive attitudes toward the success of the handicapped students in the vocational program. When negative, disruptive, or inappropriate social behaviors were occurring, it was initiated almost equally by handicapped students and nonhandicapped students. This behavior occurred during only 8% of the observations of social interaction between the handicapped and nonhandicapped students. This observation supported the statements by the vocational instructors that the general interaction between the handicapped or nonhandicapped students in the vocational setting depended entirely on the individual personality of the student rather than on the label of handicapped or nonhandicapped. It appears that the social integration of handicapped students into regular vocational education programs has resulted in positive peer relationships, an opportunity to gain status and acceptance, and a feeling for the handicapped students which is comfortable and secure

because they are functioning as full members of a classroom group with corresponding rights and responsibilities of membership. The handicapped student's positive peer expectations appear to have a positive influence on the handicapped student's achievement in the vocational program.

Objective 3 was to describe the development and implementation of individual education plans (IEPs) for handicapped students in regular vocational education programs. The interview data that was collected relative to this area can be interpreted incorrectly without specific background information. It is very enlightening to note that even though 100% of the vocational instructors stated that they had not participated in writing the IEP and 87% stated that they had not seen a copy of the student's IEP, the vocational instructors were individualizing for the handicapped students in the classroom. At no time were the vocational instructors observed in the vocational setting working or communicating in any form with the special education teachers. Seventy-four percent of the vocational instructors stated that they had never met, worked with or conversed with the special education teacher concerning the handicapped students. Numerous vocational instructors stated that they would like to meet with the special education teachers to gain more information concerning the handicapped students in the vocational programs. Fifty-nine percent of the vocational instructors stated that they had attended an ARD meeting. Forty percent stated that they had not attended an ARD meeting. It must be noted that in some districts the vocational instructor does not attend ARD meetings and that the vocational counselor and/or administrator represents the vocational instructor at the ARD meeting.

In numerous instances, the vocational instructors had attended the ARD meeting at which the IEP was written and had signed the ARD and IEP documents but were apparently unaware or uninformed as to the exact goal of the ARD meeting and the IEP itself. There appears to be a very large communication gap between the special education departments and the vocational education departments in numerous school districts across the state. This lack of communication was very evident in the statement by 100% of the vocational instructors who were interviewed that they did not know how the results of the vocational assessment were used. Seventy-four percent of the vocational instructors stated that no vocational assessment was given, 13% stated that one was given but they did not know how the results were used, and 13% stated that they did not know if a vocational assessment was given or not. It appears from their statements that the vocational instructors are not receiving information concerning the special education students that are placed in their classes. It is apparent that the policies of the Texas Education Agency relating to the inclusion of handicapped students in vocational programs are not being followed. Specifically, the attendance by the vocational instructor at the ARD meeting, the participation of the vocational instructors in the writing of the IEP, and utilization of a structured vocational assessment process.

During the fourth visit to the school districts, at which time the preliminary results were discussed, the special education personnel in numerous districts stated that the vocational instructors had attended the ARD meetings but the responses to the questionnaire indicated that they were

not apparently cognizant of what occurred during the meeting. The vocational directors stated that vocational personnel had, in some instances, been in attendance at the ARD meeting even though they had stated that they had not attended. It appears that this discrepancy results from a lack of communication of information between the vocational and special education departments. In a number of instances the vocational instructors had signed the ARD and IEP documents, had attended the ARD meeting, and yet were unable to directly relate what had occurred at the ARD meeting to the participation of the handicapped students in the vocational classroom. It must be stressed that even without this information, the observations support the findings that the vocational instructors were individualizing for the handicapped students in the classroom and the handicapped students were fully participating in a successful learning experience in the vocational setting.

Objective 4 was to describe instructional adaptations and modifications that can be defined as excess costs for funding purposes. Both the interviews and the observations support the findings that the modifications in the vocational setting for the handicapped students were of the instructional form rather than any specific modifications tnat can be defined for funding purposes as excess costs. During the in-depth interviews, 80% of the vocational instructors stated that they had not made any changes in the physical characteristics of the classrooms to accommodate the handicapped students and that basically these changes were not needed. The changes that the vocational instructors stated they had made dealt with rearranging the environment to meet the mobility needs of the students rather than physically changing the environment for instruction. During the observations, 98% of the time the handicapped students were seated or working in an arrangement

which did not isolate them from other students in the classroom or laboratory setting. No instances were observed in which specific modifications were made in the environment which could be classified as meeting the criteria for excess costs. When interviewed, the vocational instructors stated that 78% of the time the modifications made were instructional. These modifications included the use of oral testing, individualized assignments, modification in grading, and employing more concrete examples rather than oral or written instructions. When the vocational instructors were observed communicating with the handicapped students on-task, they were generally giving the students a concrete example of how to complete the task along with the oral directions. Eighty-seven percent of the vocational instructors stated that they did not use a teacher's aide or peer tutor. When peer tutors were utilized, it was done on an informal basis rather than any type of structured peer tutoring program. The vocational instructors all stated that at numerous times the peer tutor consisted of the handicapped student serving as the tutor and the nonhandicapped student being assisted. At no time during the observations were paraprofessional teachers or teacher's aides observed assisting the handicapped students with their tasks. When peer tutors were observed being utilized, 4% of the observations, it was done on an informal basis.

Objective 5 was to develop recommendations for more effective instruction of handicapped students in regular vocational programs. The vocational instructors made numerous recommendations for improving the instruction of handicapped students in the regular vocational education program. It must be noted that these recommendations were generated by a population of vocational instructors of which 60% had no experience, background or specific

education in working with handicapped students. The suggestions for improvement indicates the vocational instructors' astute awareness of the needs of the handicapped students in vocational education.

The vocational instructors were asked when instructional techniques or program structures they had found were the most effective in working with handicapped students. Seventy percent of the vocational instructors replied that concrete experiences were the most effective instructional technique. Twenty-six percent stated that working with the handicapped students or any other students on a one-to-one basis with a specific concrete task was the most effective. The vocational instructor's observations were supported by the fact that during the observations in the vocational setting the handicapped students were actively participating in concrete experiences 98% of the time that they were observed in a concrete experience. Fifty-two percent of the instructional activity observed provided an environment in which the students could manipulate and/or explore the learning materials for experiences to aid in learning the subject matter. When the vocational instructors were asked to state what instructional techniques or program structures they had found to be the least effective, 68% stated that reading and written assignments were least effective, 23% stated that oral directions were least effective, and 9% stated that lecture was the least effective instructional method. Again, these statements were supported by the observations. When the vocational instructors were observed lecturing, 22% of the time, or providing abstract experiences such as verbal or printed information to aid the handicapped student in learning the subject matter, 9% of the time, the participation rate of the handicapped students dropped from 98% in concrete experience to a level of 80% during lecture and/or abstract

experiences. This was the lowest level of participation of the handicapped student in an instructional activity that was observed. It should be noted that this level is significantly higher than would be observed in a regular academic setting. The vocational instructor's responses during the in-depth interview support the project observation that as a whole the vocational instructors are aware of the most effective instructional methods for enhancing the learning of the handicapped student in the vocational setting without the benefit of specific special education training. It should be noted that the vocational instructors utilized these instructional methods with all of these students, not individually in isolation with just the handicapped students. This appears to be the nature of the vocational instruction to a greater extent in the pre-employment and CVAE laboratories than the more academically oriented home economics and vocational agriculture. The specific recommendations made by the vocational instructors for the more effective instruction of handicapped students in regular vocational programs were directly related to the instructional modifications that the vocational instructors were already utilizing. The vocational instructors stated that they needed more hands-on activities for the handicapped students, that special education needed to provide the handicapped students with more vocationally oriented survival skills at an earlier grade level, that vocational and special education personnel needed to meet and share information relative to the handicapped student's participation in the vocational program, the student's level of functioning and academic strengths and weaknesses. The vocational instructors also recommended that more specific guidelines be furnished by TEA for the mainstreaming of handicapped students into the regular vocational setting and more detailed information concerning the pres-

sent guidelines. Other recommendations made by the vocational instructors were smaller classes, more funding, group or level instruction, and vocational training beginning at an earlier age for special education students.

The descriptions of the nine vocational settings were included in order to present a unique perspective on the data that was collected. These descriptions should give the reader a sense of the atmosphere prevalent in the pre-employment labs, CVAE lab settings and the more academically oriented homemaking and vocational agriculture settings. The environment of these three settings differs due to the nature of the vocational program. These settings also vary throughout the State of Texas due to the diversity of size of school districts across the State. The availability of vocational education programs varies with the size of the school district and the general attitude and philosophy of the administration as well as community resources. It appears that the type of vocational setting and the vocational instructors' attitudes in this setting towards the handicapped student have the greatest bearing on the success of the handicapped student in the regular vocational setting.

Recommendations

Recommendation 1 - Vocational and Special Education administrators should be cognizant of the existing policies and procedures in reference to attendance and participation in the IEP process, attendance at ARD meetings by the vocational instructor and establishment and implementation of the vocational assessment. The information concerning the ARD, IEP, and vocational assessment data should be transmitted to the vocational instructor in a form that they can utilize.

Recommendation 2 - A greater degree of communication and cooperation between vocational education personnel and special education personnel should be established. This can be done through cooperative inservice training for both special and vocational education personnel. Such training should focus specifically on developing more cooperation and communication between the two departments.

Recommendation 3 - The special education programs should focus more on pre-vocational and vocational survival skills for the handicapped students. These skills should begin at an early age and be incorporated into the special education curriculum.

Recommendation 4 - Texas Education Agency should support the establishment of exemplary and innovative systems within the school districts throughout the State for the delivery of vocational education services to handicapped students. Specific emphasis should be placed upon communication and cooperation between vocational and special educators within the districts.

SUMMARY

Purpose

The purpose of this investigation was to gather data pertinent to the instruction of special education students in regular vocational education programs. Systematic observational and interview data relative to this instructional process was not available.

The specific objectives, as outlined in the project proposal were:

1. To observe and describe the handicapped student - vocational instructor interaction in regular vocational education programs.
2. To observe and describe the handicapped student - nonhandicapped student interaction in regular vocational education programs.
3. To describe the development and implementation of the individual education plans (IEP's) for handicapped students in regular vocational education programs.
4. To describe the instructional adaptations and modifications that can be defined as excess costs for funding purposes.
5. To develop recommendations for more effective instruction of handicapped students in regular vocational education programs.

Design

Eleven independent school districts were randomly selected in which vocational classroom observations and detailed interviews were conducted. The criteria necessary for participation was that the district have two regular vocational teachers who each instructed two handicapped students. In each of these districts the project supervisor conducted a detailed

interview with two vocational education instructors and observed the instructional interaction between the handicapped students and the vocational instructors and the interaction between the handicapped students and the nonhandicapped students. These observations were made on three different days using the Fair Vocational Observation System, an instrument specially designed to record the vocational instructor/handicapped student and the handicapped student/nonhandicapped student interactions. This data was analyzed and interpreted in reference to the five objectives of the study.

Results

Objective 1. Analysis of the observation data supports the statements made during the interviews of the vocational instructors. In the area of instruction, 91% of the vocational instructors interviewed stated that their classes were organized as a group with the handicapped student participating fully within this group. During observations, 96% of the time the classes were organized as groups with the handicapped students fully participating within the groups. Eighty-seven percent of the vocational instructors stated that they did not use a teachers aide, peer tutor or other paraprofessional personnel and in only four percent of the observations was the use of additional personnel in the form of informal peer tutoring observed. The vocational instructors stated that they expected the handicapped student to participate fully in the instructional activity and 92% of the time that instruction was observed the handicapped student was participating in the instructional activity. Fifty-two percent of the instruction involved the use of concrete activities. When concrete activities were being utilized for instruction, the handicapped students

were participating 98% of the time in the concrete activity as opposed to a participation level of 80% in lecture and abstract experiences. The vocational instructors who were observed utilizing lecture and abstract instructional techniques stated that these techniques were not effective with handicapped students. The positive expectations of the vocational instructors for the future employment of handicapped students, over 77% stated that the students would be employed after leaving the vocational program, resulted in a positive atmosphere for all students in the vocational setting. The highest level of participation by the handicapped students in the learning activity was observed in the pre-employment labs and the CVAE Programs. In these programs, it was undiscernable which students were the handicapped students. There was a 92% level of participation by the handicapped student in the instructional activity with or without encouragement by the vocational instructor. The vocational instructor's statements that the handicapped students participated without requiring any more added time or extra help from the vocational instructor than a regular student were supported by the observations. Seventy-three percent of the time that the students were actively participating in instructional activities they were not requesting clarification of information, recommendations, additional help of communicating with the vocational instructors on task. The handicapped students observed were able to function independently and successfully in the vocational setting. Sixty-one percent of the time that interactions were occurring between the vocational instructors and the handicapped students there were no negative social or emotional interactions.

Objective 2. Ninety-six percent of the vocational instructors stated that the general interactions of handicapped and nonhandicapped students in the vocational setting was positive. Eighty-three percent of the vocational instructors stated that the handicapped and nonhandicapped students got along very well together. Thirteen percent stated that all of the students got along well together, and that it didn't matter whether the students were handicapped or nonhandicapped. During the observations, 97% of the time the handicapped students were seated or working in an arrangement which placed them in close proximity with all of the other students in the classroom or laboratory setting. This arrangement did not isolate the handicapped students from the other students in the classroom or laboratory setting. On the average, 53% of the time that student interactions were observed, the handicapped students initiated either on-task communication, requests for additional help, or positive social interaction with the nonhandicapped students. Forty-six percent of the time or an almost equal amount, the nonhandicapped students initiated the on-task communication, requests for additional help or positive social interaction with the handicapped students. When this student interaction was divided into the three categories of communication, additional help, and positive social or emotional interaction, the handicapped students requested assistance from the nonhandicapped students 49% of the time and equally the nonhandicapped students requested assistance from the handicapped students 49% of the time. When negative, disruptive, or inappropriate social behaviors were occurring, it was initiated almost equally by handicapped students and nonhandicapped students. It appears that the social integration of

handicapped students into regular vocational education programs has resulted in positive peer relationships, an opportunity to gain status and acceptance, and a feeling of security because they are functioning as full members of a classroom group with corresponding rights and responsitilities of membership.

Objective 3. Although 100% of the vocational instructors stated that they had not participated in writing the IEP and 87% stated that they had not seen a copy of the student's IEP, the vocational instructors were individualizing for the handicapped students in the classroom. At no time were the vocational instructors observed in the vocational setting working or communicating in any form with the special education teachers. Seventy-four percent of the vocational instructors stated that they had never met, worked with or conversed with the special education teacher concerning the handicapped students. Numerous vocational instructors stated that they would like to meet with the special education teachers to gain more information concerning the handicapped students in the vocational programs. Fifty-nine percent of the vocational instructors stated that they had attended an ARD meeting.

In numerous instances, the vocational instructors had attended the ARD meeting at which the IEP was written and had signed the ARD and IEP documents but were apparently unaware or uninformed as to the exact goal of the ARD meeting and the IEP. There appears to be a very large communication gap between the special education departments and the vocational education departments in numerous school districts across the state. This lack of communication was very evident in the statement by 100% of the vocational instructors who were interviewed that they did not know how the results of

the vocational assessment were used. It is apparent that the recommendations of the Texas Education Agency relating to the inclusion of handicapped students in vocational programs are not being followed. Specifically, the attendance by the vocational instructor at the ARD meeting, the participation of the vocational instructors in the writing of the IEP, and utilization of a structured vocational assessment process.

Objective 4. Both the interviews and the observations support the findings that the modifications in the vocational setting for the handicapped students were of the instructional form rather than any specific modifications that can be defined for funding purposes as excess costs. During the interviews, 80% of the vocational instructors stated that they had not made any changes in the physical characteristics of the classrooms to accommodate the handicapped students and that basically these changes were not needed. The changes that the vocational instructors stated they had made were concerned with rearranging the environment to meet the mobility needs of the students rather than physically changing the environment for instruction. No instances were observed in which specific modifications were made in the environment which could be classified as meeting the criteria for excess costs. These modifications included the use of oral testing, individualized assignments, modification in grading, and employing more concrete examples rather than oral or written instructions.

Objective 5. The vocational instructors made numerous recommendations for improving the instruction of handicapped students in the regular vocational education program. The vocational instructors were asked which instructional techniques or program structures they had found were the

most effective instructional technique. Twenty-six percent stated that working with the handicapped students or any other students on a one-to-one basis with a specific concrete task was the most effective. These instructors stated that they needed more hands-on activities for the handicapped students with more vocationally oriented survival skills at an earlier grade level, that vocational and special education personnel needed to meet and share information relative to the handicapped student's participation in the vocational program, and the student's level of function and academic strengths and weaknesses. The vocational instructors also recommended that more specific guidelines be furnished by TEA for the mainstreaming of handicapped students in the regular vocational setting and more detailed information concerning the present guidelines. Other recommendations made by the vocational instructors were smaller classes, more funding, group or level instruction, and vocational training beginning at an earlier age for special education students.

APPENDIX A

Letters

UTD

THE UNIVERSITY OF TEXAS AT DALLAS

October 30, 1980

Dear Superintendent:

This is a letter of introduction for the project entitled, "Handicapped Students in Regular Vocational Education: Impact on Class Interaction and Instructional Variables". This is a project funded by the Department of Occupational Education and Technology, Texas Education Agency. The purpose of the project is to gather data pertinent to the instruction of special education students in regular vocational education programs. Systematic observational and interview data relative to this instructional process is not available.

Your district has been selected to receive information concerning this project because it was one of the more than three hundred districts that cooperated with a related project that was completed last year. The project director and The University of Texas at Dallas commend you for recognizing the importance of research and positive efforts to improve the education of all children in Texas.

As you are probably aware, there is an increased emphasis, at the local, state, and national levels, on providing comprehensive vocational education programming for handicapped students in regular vocational education programs. The objectives of this project are:

1. To observe and describe the handicapped student-vocational instructor interaction in regular vocational education programs.

2. To observe and describe the handicapped student-nonhandicapped student interaction in regular vocational education programs.

3. To describe the development and implementation of individual education plans (IEP's) for handicapped students in regular vocational education programs.

4. To describe instructional adaptations and modifications that can be defined as excess costs for funding purposes.

5. To develop recommendations for more effective instruction of handicapped students in regular vocational education programs.

AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER

BOX 688 RICHARDSON, TEXAS 75080

To accomplish these objectives, ten school districts who have special education students receiving instruction in regular vocational education programs will be selected to participate in the project. These districts will be selected randomly with stratification for geographical location and average daily attendance. Two vocational instructors in each district, who each instruct a minimum of two special education students, will be interviewed and systematically observed at three different times. The data collected will be analyzed, interpreted and reported in relation to the five objectives of the project.

The information that will be gathered from this study will be reported to Texas Education Agency and those districts who participate. The names of districts that participate will not be reported to TEA or known to anyone other than the project director and his immediate staff. The report of the project will be helpful to local districts for planning and implementing programs for handicapped students, to institutions of higher education for planning preservice and inservice training programs, and to the Texas Education Agency for evaluating local programs and future planning.

Please complete the enclosed page indicating your willingness to participate in this important project. A stamped, self-addressed envelope is supplied for your return of this form.

Thank you for your cooperation.

Sincerely,

George W. Fair, Ph.D.
Project Director

GWF/aec
Enc.

HANDICAPPED STUDENTS IN REGULAR VOCATIONAL EDUCATION:
IMPACT ON CLASS INTERACTION AND INSTRUCTIONAL VARIABLES

District Name: _____

Mailing Address: _____

_____

_____ Yes, our district has special education students included in regular vocational education classes and will participate in the project described in the enclosed letter if selected.

_____ Our district does not have two vocational education instructors who each instruct two special education students in regular vocational education classes.

_____ No, our district does not wish to cooperate with the project described in the enclosed letter.

Superintendent's Signature _____

_____
(Please Print)

The person who has responsibility for vocational education in our district is:

Name: _____

Mailing Address: _____

_____

_____

UTD

THE UNIVERSITY OF TEXAS AT DALLAS

October 7, 1980

Dear Superintendent:

In October of last year a letter requesting your cooperation and a description of the objectives of a research project entitled, "Vocational Education Programming for Special Education Students in Texas - 1980" was sent to you. This project was funded by the Department of Occupational Education and Technology, Texas Education Agency and was completed in June, 1980. The information gathered and recommendations of this study have been reported to TEA and the 40 districts who participated in detailed interviews. As was stated in our introductory letter last year, no names of school districts were mentioned in any reports.

Enclosed is a summary of the final report of this project. Three hundred districts cooperated with our project and thank you very much for your willingness to participate and the cooperation that was extended by the personnel in your school district.

The findings of the project will be helpful by enabling more handicapped students to take advantage of vocational education opportunities in Texas. This report also indicates recommendations for Texas Education Agency and school districts that should further advance the quality of vocational education in Texas.

If I can be of assistance to you in any way in the future, please do not hesitate to contact me.

Sincerely,

George W. Fair

George W. Fair, Ph. D.
Project Director

GWF/ac

Enclosure

AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER

BOX 688 RICHARDSON, TEXAS 75080

UTD THE UNIVERSITY OF TEXAS AT DALLAS

CONSENT FORM

Handicapped Students in Regular Vocational Education:

Impact on Class Interaction and Instructional Variables

George W. Fair, Ph.D.
Project Director
School of Human Development

This research project, funded by the Texas Education Agency, is concerned with the instruction that special education students receive in regular vocational education classes. Three observations will be made of your classes that contain special education students. The observer will make notes on how the special education student gets along with the other students in class and your interaction with students in class. You will also be interviewed to gather information concerning how you feel about having special education students in your class and their instruction. At the end of the study the interviewer will meet with you and discuss the results of the study. The information that will be obtained from this research project is important to improving the instruction for special education students in regular vocational education classes.

The notes that will be made by the observer in class and the interviewer will be seen only by research project personnel and no names of students, teachers, or school districts will be used in the report of this research. Participation in this project is strictly voluntary.

I have read and discussed this consent form with project personnel. All of my questions concerning this research project have been answered and I would like to participate in the project.

_____ _____

Signature Date

AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER

BOX 688 RICHARDSON, TEXAS 75080

APPENDIX B

Interview Form

INTERVIEW - VOCATIONAL INSTRUCTOR

(Obj 1) 1. What is the subject matter and the goal of the class I will be observing? _____

_____

(Obj 1) 2. How many students are there in the class? _____

How many handicapped students? _____

Please give a general description of the students: _____

_____

Please give a general description of the handicapped students I will be observing. For example: Strengths, weaknesses, general level of functioning in the vocational class.

_____

(Obj 3) 3. Do you have a copy of the handicapped student's IEP's? Yes _____ No _____. Have you utilized the IEP's? Yes _____ No _____.

How? _____

How could it be made more useful to you? _____

_____

(Obj 3) 4. Did you attend the ARD meeting? Yes _____ No _____.

How did you participate in the ARD meeting? _____

_____

What recommendations do you have concerning the ARD meeting? _____

_____

(Obj 3) 5. Did you participate in writing the IEP? Yes _____ No _____.

How? _____

_____

(Obj 3) 6. Was a vocational assessment given? Yes _____ No _____.

What type of assessment? _____

How were the results used? _____

(Obj 1) 7. How is the class generally organized for instruction? _____

_____

What place does the handicapped student generally occupy in this organization? _____

_____

(Obj 4) 8. Have any changes been made in the physical characteristics of the classroom to accommodate the handicapped student? Yes _____ No _____ Not needed _____. What changes? _____

_____

(Obj 1) 9. What is your philosophy towards mainstreaming handicapped students? _____

_____

(Obj 4) 10. Has mainstreaming had any effect on your budget or funding in general? Yes _____ No _____. How? _____

_____

Do you have any suggestions or recommendations in this area? Yes _____ No _____.

(Obj 1) 11. What is your vocational training background and teaching experience?

_____

(Obj 1) 12. What experience, background, or education have you had in working with handicapped students? None _____ Inservice _____ Other _____

Have you had handicapped students before? Yes _____ No _____.

(Obj 4) 13. Are there any modifications in equipment, specific educational materials, or instructional adaptations utilized for the handicapped student? Yes _____ No _____. Please describe _____

_____

(Obj 4) 14. Does a teachers aide or peer tutor work individually with the handicapped student? Yes _____ No _____. How? _____

_____

Are any other support services used? Special Education teacher _____ Counselor _____ Other _____. How? _____

_____

(Obj 1) 15. Do you meet with or work with the Special Education teacher? Yes _____ No _____. How: _____

_____

(Obj 1) 16. At what level do you expect the handicapped student to perform?

_____

(Obj 1) 17. What are your expectations for the future of this student?

_____

(Obj 1) 18. How do you grade the student? With rest of class _____, individually _____, predetermined grade _____, other _____

_____.

(Obj 1) 19. What contact have you had with the parents? None _____, standard conference _____, other _____

_____

What are their expectations for the student? Unrealistic _____, realistic _____, don't know _____, other _____

_____

(Obj 1) 20. Does the handicapped student participate in the vocational club? Yes _____ No _____. How? _____

_____

(Obj 2) 21. Please describe the general interaction of the nonhandicapped and handicapped students in the classroom and during related activities.

_____

_____

(Obj 5) 22. What recommendations do you have for making vocational education more effective for handicapped students? _____

_____

_____

(Obj 5) 23. What instructional techniques or program structure have you found to be most effective? _____

_____

Least effective? _____

_____

(Obj 5) 24. What is your greatest instructional need for handicapped students?

_____

_____

_____

APPENDIX C

Fair Vocational Observation System

FAIR VOCATIONAL OBSERVATION SYSTEM

Procedures For Use

The Fair Vocational Observation System is designed to provide a framework for observing and recording the vocational classroom interaction between the vocational teacher and the handicapped student and between the handicapped student and the nonhandicapped student. The observer's task is to observe those interactions and to record only those observable behaviors listed in the system that occur during a specific time segment. The observer must be completely familiar with the observation instrument and the definitions of the observable interactions before using the system. Three complete training observations are recommended to familiarize the observer with the observation and recording techniques.

To implement the system, the observer should sit or stand unobtrusively in the classroom or laboratory setting in a position to observe both the vocational instructor and the handicapped student. The vocational instructor/handicapped student interactions and the handicapped student/nonhandicapped student interactions are observed and recorded simultaneously. The materials required for the observation are the observation form, a pen or pencil, and a stop watch.

The observation period is 36 minutes in length and comprised of six separate six minute observation and recording segments. These six segments are indicated numerically on the observation form beginning with item seven. During the first six minutes of the observation period, segment one, the observer spends the first three minutes observing the interactions and the second three minutes recording by checking blanks numbered one or secrions numbered one for the boxes. Only those interactions directly observed

during the preceding three minutes are recorded. An interaction is given only one check mark per three minute observation segment regardless of how many times it occurred during that time segment. When the three minute recording period has ended for segment one, the observer immediately begins the second three minutes of observation for segment two. This is followed by three minutes of recording for segment two. This procedure of three minutes of observation followed by three minutes of recording is continued for the remaining four segments of the 36 minute observation period with the observer checking the numerically corresponding blank or box. A response must be completed for each item for each six minute observation period.

Items numbered three through six, 18 through 24 and 28 and 29 are completed after the 36 minute observation recording period. The observer indicates the response to each of these items that is most consistent with the majority of the 18 minutes of observation.

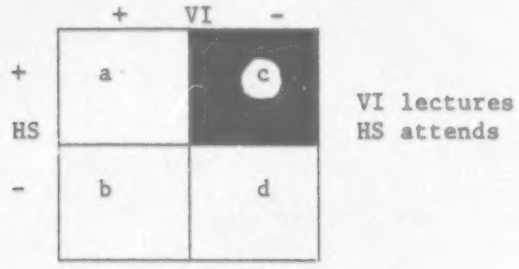
Specific Recording Procedures and Definitions

1. District Code - assigned by project.
2. ADA - Average Daily Attendance.

Instruction

3. Vocational instructor (VI) subdivides class and directs handicapped student (HS) to participate in a group with NHS which is less than 1/3 the class size.
4. VI subdivides class and directs HS to participate in a group with other handicapped students.
5. VI does not subdivide class and directs HS to participate with the class as a whole.
6. HS works alone on task.

For each item that has a recording square the observer places a mark in the appropriate area after each observation period. For example:



a. VI+/HST: Vocational instructor (VI) lectures and the handicapped student (HS) attends.

b. VI+/HS-: VI lectures and HS does not attend.

c. VI-/HS+: VI does not lecture and the HS attends. (This situation cannot exist and is therefore blackened.)

d. VI-/HS-: VI does not lecture and HS does not attend.

7. Lecture: VI addresses discourse on topic pertaining to subject matter to class as a whole including HS and HS looks at and/or displays listening behaviors while VI is speaking. VI addresses discourse on topic pertaining to subject matter to class as a whole including HS and HS does not look at and/or display listening behaviors while VI is speaking. VI does not address discourse on topic pertaining to subject matter to class as a whole including HS and HS does not look at and/or display listening behaviors towards VI.

8. Concrete experience: VI creates an environment where HS can manipulate and/or explore learning materials or experiences to aid in learning subject matter and HS engages in these manipulative or exploratory activities. VI creates an environment where HS can manipulate and/or explore learning materials or experiences to aid in learning subject matter and HS does not engage in these manipulative or exploratory activities. VI does not create an environment where HS can manipulate and or explore learning materials or experiences to aid in learning subject matter and HS does not engage in manipulative or exploratory activities.

9. Representational experiences: VI provides HS with pictures, graphs, and illustrations to aid in learning the subject matter and HS utilizes these materials. VI provides HS with pictures, graphs or illustrations to aid in learning the subject matter and HS does not utilize these materials. VI does not provide HS with pictures, graphs or illustrations to aid in learning the subject matter and HS does not utilize these materials. VI does not provide HS with pictures,

graphs or illustrations to aid in learning the subject matter and HS does not utilize these materials.

10. Abstract experiences: VI provides HS with verbal or printed information to aid HS in learning subject matter and HS utilizes these materials. VI provides HS with verbal or printed information to aid HS in learning subject matter and HS does not utilize these materials.

11. Encourage participation: VI displays verbal and/or nonverbal behavior which asks for, accepts, uses, or amplifies HS's attempt to contribute to or volunteer for participation in the instructional activity. VI displays verbal or nonverbal behavior which asks for, accepts, uses or amplifies HS's attempt to contribute to or volunteer for participation in the instructional activity. VI does not display verbal and/or nonverbal behavior which asks for, accepts, uses, or amplifies HS's attempt to contribute to or volunteer for participation in the instructional activity and HS actively participates in the instructional activity. VI does not display verbal and/or nonverbal behavior which asks for, accepts, uses or amplifies HS's attempt to contribute to or volunteer for participation in the instructional activity and HS does not actively participate in the instructional activity.

12. Clarify information: VI explains information to HS so that it can be understood by HS when HS displays a lack of understanding through facial expressions or verbal statements when VI directs requests or statements to HS. VI explains information to HS so that it can be understood by HS when HS does not display a lack of understanding through facial expressions or verbal statements when VI directs requests or statements to HS. VI does not explain information to HS so that it can be understood by HS when HS displays a lack of understanding through facial expressions or verbal statements when VI directs requests or statements to HS. VI does not explain information to HS and HS does not display a lack of understanding.

13. Recommendations: VI advises HS on possible actions relating to class procedure, student behavior or subject matter and HS follows those recommendations. VI advises HS on possible actions relating to class procedure, student behavior or subject matter and HS does not follow those recommendations. VI does not advise HS on possible actions relating to class procedure, student behavior or subject matter and HS does not follow those recommendations. VI does not advise HS on possible actions relating to class procedure, student behavior or subject matter and HS does not follow recommendations.

14. Orders: VI gives directives on class procedures, student behavior or subject matter to HS and HS follows these directives. VI gives directives on class procedure, student behavior or subject matter to HS and HS does not follow these directives. HS does not give directives on class procedure, student behavior or subject matter to HS and HS does not follow directives.

15a. Communication on task: VI addresses HS concerning matter and HS responds on subject matter. VI addresses HS on subject matter and HS does not respond. VI does not address HS on subject matter and HS does not address VI on subject matter.

b. Communication on task: HS addresses VI concerning subject matter and VI responds on subject matter. HS addresses VI on subject matter and VI does not respond.

16. Additional help: HS asks VI for additional help and VI responds by providing a peer tutor, teachers aide, clarification, instructor attention or additional information. HS asks VI for additional help and VI does not provide additional help. HS does not request additional help but VI provides HS with additional help. HS does not ask for additional help and VI does not provide additional help.

17a. Questioning: VI asks appropriate questions, permits HS time to answer and restructures question if HS is confused and HS responds. VI asks appropriate questions, permits HS time to answer and restructures questions if HS is confused and HS does not respond. VI does not utilize the questioning technique and HS does not respond.

b. Questioning: VI asks inappropriate questions, does not permit time for HS to answer, give HS the answer, or asks another student for the answer and HS responds. VI asks inappropriate questions, does not permit time for HS to answer, gives HS the answer or asks another student for the answer and HS does not respond.

18. A vocational laboratory setting consists of a simulated setting within the school in which the vocational skills are learned through actual hands on experience. An auto paint shop, a greenhouse, a commercial kitchen and a metal trades shop are examples of a laboratory setting.

19. A vocational classroom setting utilizes the standard academic setting of desks and chairs.

20. VI uses other student to help HS with classwork.

21. VI uses a paraprofessional teacher to assist HS with classwork.

22. VI does not use other students or paraprofessionals to help HS with classwork.

23. Seating/working arrangement places HS in close proximity with other students in the classroom/laboratory.

24. Seating/working arrangement isolates HS from other students in the classroom laboratory.

Affective

25a. Communication on a general topic: HS addresses VI on any topic other than classwork; this includes stating opinions, feelings and preferences; and VI responds on a general topic. HS addresses VI on any topic other than classwork; this includes stating opinions, feelings and preferences; and VI does not respond on a general topic. HS does not communicate with VI on a general topic and VI does not communicate with HS on a general topic.

b. Communication on a general topic: VI addresses HS on any topic other than classwork; this includes stating opinions, feelings and preferences; and HS responds on a general topic. VI addresses HS on any topic other than classwork; this includes stating opinions, feelings, and preferences; and HS does not respond on a general topic.

26a. Positive social or emotional interaction: VI directs supportive statements or actions towards HS which have positive connotations such as acting friendly, praising, approving, encouraging, rewarding, joking, or laughing with HS and HS responds. VI directs supportive statements or actions towards HS which have positive connotations and HS does not respond. VI does not direct supportive statements or actions towards HS which have positive connotations and HS does not direct supportive statements to VI.

b. Positive social or emotional interaction: HS directs supportive statements or actions towards VI which have positive connotations such as acting friendly, praising, approving, encouraging, rewarding, joking or laughing with VI and VI responds in a positive manner. HS directs supportive statements or actions toward VI which have positive connotations and VI does not respond.

27a. Negative social or emotional interaction: VI directs negative statements or actions towards HS such as belittling, insulting, discouraging, laughing at HS, expressing fear, anger, hostility, disappointment, displeasure or unhappiness and HS responds. VI directs negative statements or actions towards HS and HS does not respond. VI does not direct negative statements or actions towards HS and HS does not direct negative statements or actions toward VI.

b. Negative social or emotional interaction: HS directs negative statements or actions towards VI such as belittling, insulting, discouraging, laughing at HS, expressing fear, anger, hostility, disappointment, displeasure or unhappiness and VI responds. HS directs negative statements or actions toward VI and VI does not respond.

Management

28. VI lectures to class or HS and does not allow or encourage class discussion or interaction.

29. VI discusses with class or HS subject matter, encouraging and allowing class input.

30a. Communication: HS initiates on task communication with NHS, NHS responds. HS initiates on task communication with NHS, NHS does not respond. HS does not initiate, NHS does not respond; therefore there is no communication between NHS and HS.

b. Communication: NHS initiates on task communication with HS, HS responds on task. NHS initiates on task communication, HS does not respond.

31a. Additional help: HS requests assistance from the NHS on task, and NHS responds by assisting HS on task. HS does not request assistance from NHS on task but NHS provides assistance on task. HS requests assistance from NHS on task and NHS declines request. HS does not request and NHS does not provide help.

b. Additional help: NHS requests assistance from the HS on task and HS responds by assisting NHS on task. NHS does not request assistance from HS on task but HS provides assistance on task. NHS requests assistance on task and HS declines request.

32a. Positive Social or Emotional Interaction: HS initiates actions toward NHS which have positive implications and NHS responds with positive reaction. For example: any friendly act or overture; praising, approving, encouraging, rewarding, joking or laughing. HS initiates any of these positive interactions and NHS does not respond. HS and NHS have no positive social or emotional interactions.

b. Positive Social or Emotional Interaction: NHS initiates actions toward HS which have positive implications and HS responds with a positive reaction. For example: any friendly act or overture; praising, approving, encouraging, rewarding; joking or laughing. NHS initiates any of these positive interactions and HS does not respond.

33a. Negative Social or Emotional Interaction: NHS initiates actions toward NHS which have negative implications and NHS responds with a negative reaction. For example: threatening, discouraging, name calling, poking fun, belittling, laughing at HS; or expressing fear, hostility, disappointment, displeasure or unhappiness. HS initiates any of these interactions and NHS does not respond. HS and NHS have no negative social or emotional interactions.

b. Negative Social or Emotional Interaction: NHS initiates actions toward HS which have negative implications and HS responds with a negative reaction. For example: threatening, discouraging, name calling, poking fun, belittling, laughing at HS; or expressing fear, hostility, disappointment, displeasure or unhappiness. NHS initiates any of these interactions and HS does not respond in this manner.

34a. Disruptive or Inappropriate Behavior: HS initiates interaction with NHS which is off task and disturbs the learning activity of the whole class or group and the NHS responds with a like reaction. For example: loud talking, laughing, fighting, yelling, pushing, arguing, violence, or acts of destruction. HS initiates any of these interactions and NHS does not respond in this manner. No disruptive or inappropriate behavior by NHS or HS.

b. Disruptive or Inappropriate Behavior: NHS initiates interaction with HS which is off task and disturbs the learning activity of the whole class or group and the HS responds with a like reaction. For example: loud talking, laughing, fighting, yelling, arguing, violence or acts of destruction. NHS initiates any of these interactions and HS does not respond in this manner.

35a. Inappropriate behavior on task: HS initiates an interaction with NHS which is off task and inappropriate such as teasing, joking, or laughing, while continuing to work on task and NHS responds. HS initiates an interaction with NHS which is off task and inappropriate while continuing to work on task and NHS does not respond. HS does not initiate an interaction with NHS off task and NHS does not respond or initiate.

b. Inappropriate behavior on task: NHS initiates an interaction which is off task and inappropriate such as teasing, joking or laughing, while continuing to work on task and HS responds. NHS initiates an interaction with NS which is off task and inappropriate while continuing to work on task and HS does not respond.

HANDICAPPED STUDENTS IN REGULAR VOCATIONAL EDUCATION:
IMPACT ON CLASS INTERACTION AND INSTRUCTIONAL VARIABLES

FAIR VOCATIONAL OBSERVATION SYSTEM (FAIR-VOS)

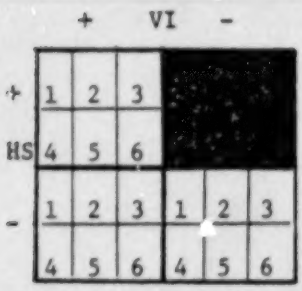
1. _____ District Code

2. _____ ADA

VOCATIONAL INSTRUCTOR-HANDICAPPED STUDENT INTERACTIONS

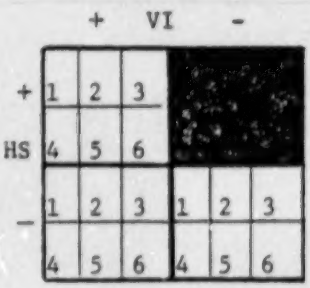
	Instruction No (0)	Instruction Yes (1)	
3.	_____	_____	VI places HS in small group with nonhandicapped students.
4.	_____	_____	VI places HS in small group with handicapped students.
5.	_____	_____	VI includes HS in large group with all students.
6.	_____	_____	HS works independently at task.

7. Lecture



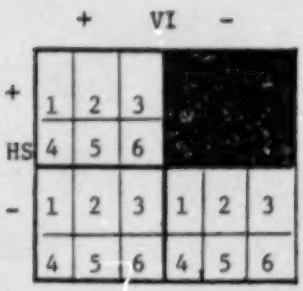
VI lectures
HS attends

8. Concrete experiences



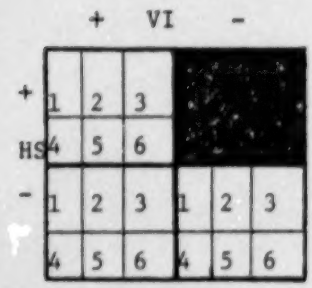
VI provides
HS participates

9. Representational experiences



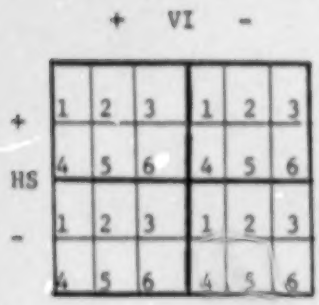
VI provides
HS participates

10. Abstract Experiences



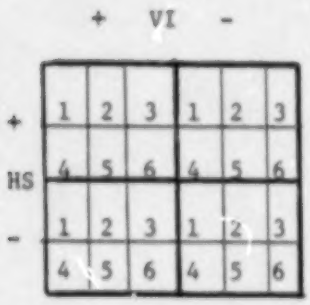
VI provides
HS participat

11. Encourage participation



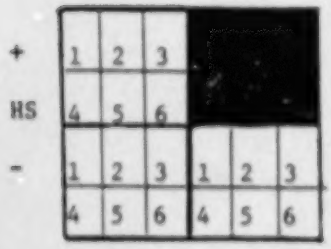
VI encourages
HS participates

12. Clarify information



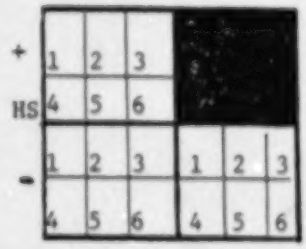
VI clarifies
HS indicates need for clarification

13. Recommendations



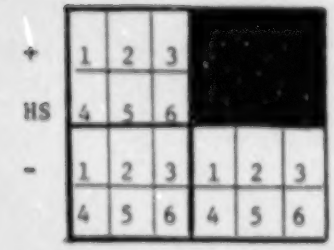
VI makes recommendations
HS follows recommendations

14. Orders



VI gives commands or orders
HS follows orders

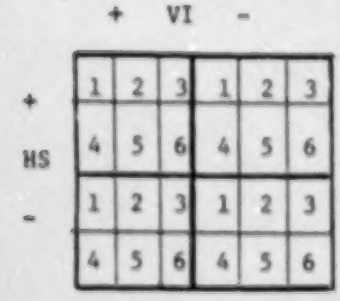
15. Communication on Task



a.
VI communicates on task
HS responds on task

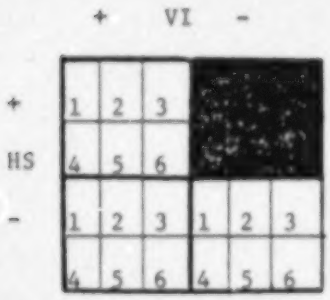
b.
VI responds on task
HS communicates on task

16. Additional Help

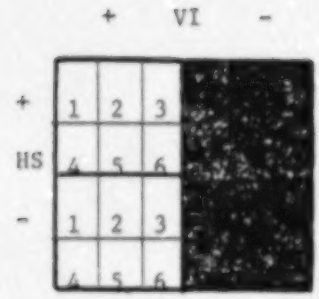


VI provides
HS requests

17. Questioning



a.
VI use positive questioning
HS responds



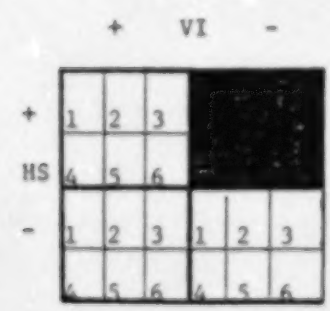
b.
VI use negative questioning
HS responds

Environment

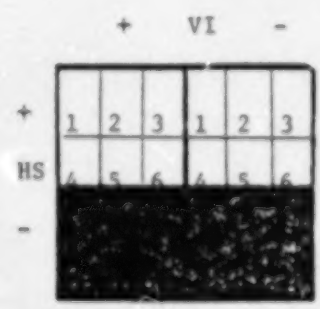
	No 0	Yes 1	
18.			Laboratory setting.
19.			Classroom setting.
20.			VI utilizes a peer tutor for HS.
21.			VI utilizes a teachers aide for HS.
22.			VI does not utilize additional personnel to assist.
23.			HS is at work station as part of the class.
24.			HS is at work station in an isolated spot in the classroom.

Affective

25. Communication on a general topic

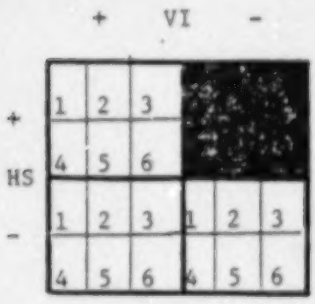


a.
VI communicates
HS responds

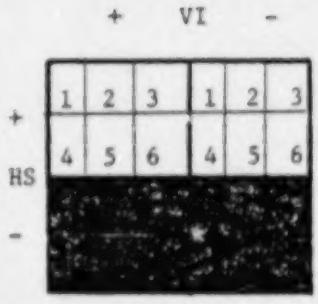


b.
VI responds
HS initiates

26. Positive social or emotional interaction

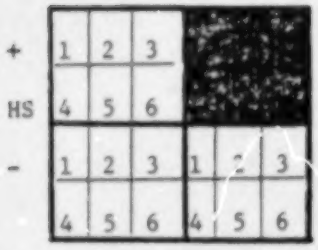


a.
VI initiates
HS responds

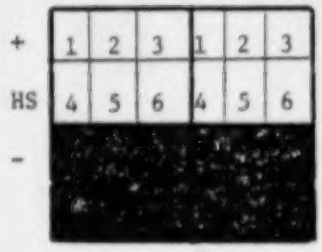


b.
VI responds
HS initiates

27. Negative social or emotional interaction



a.
VI initiates
HS responds

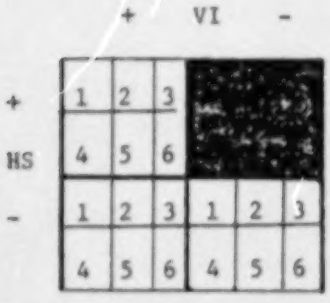


b.
VI responds
HS initiates

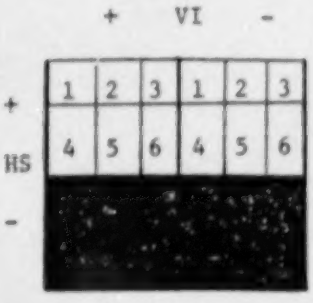
Management

	No 0	Yes 1	
28.			VI approaches subject matter in a formal way.
29.			VI approaches subject matter in a casual way.

30. Communication

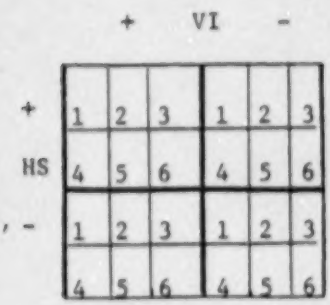


a.
HS initiates
NHS responds

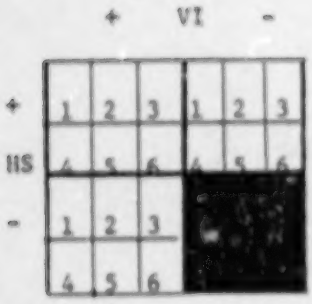


b.
HS responds
NHS initiates

31. Additional help

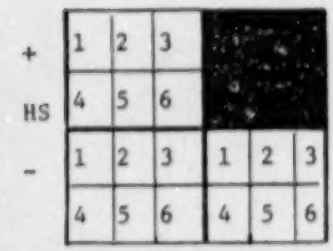


a.
HS requests
NHS provides

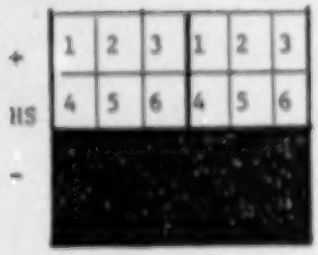


b.
HS provides
NHS requests

32. Positive social or emotional interaction

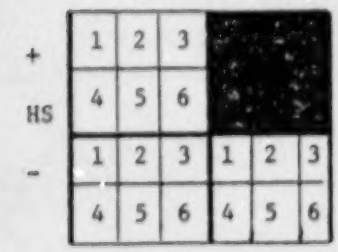


a.
HS initiates
NHS responds

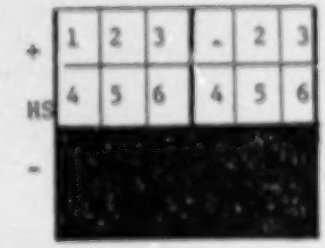


b.
HS responds
NHS initiates

33. Negative social or emotional interaction

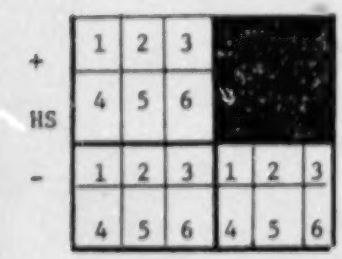


a.
HS initiates
NHS responds

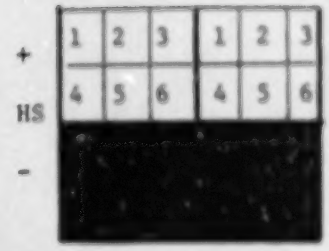


b.
HS responds
NHS initiates

34. Disruptive or inappropriate behavior

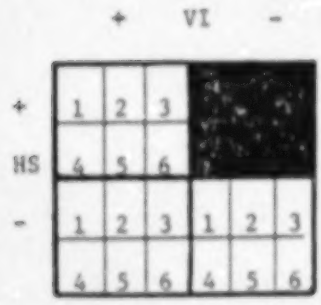


a.
HS initiates
HNS participates

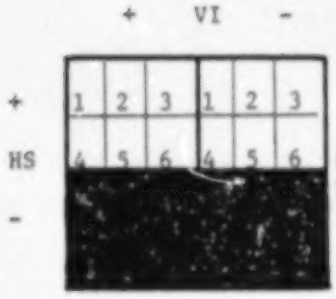


b.
HS participates
NHS initiates

35. Inappropriate behavior on task



a.
HS initiates
NHS participates



b.
HS participates
NHS initiates

APPENDIX D

Interview Data

HANDICAPPED STUDENTS IN REGULAR VOCATIONAL EDUCATION:
IMPACT ON CLASS INTERACTION AND INSTRUCTIONAL VARIABLES

FAIR VOCATIONAL OBSERVATION SYSTEM (FAIR-VOS)

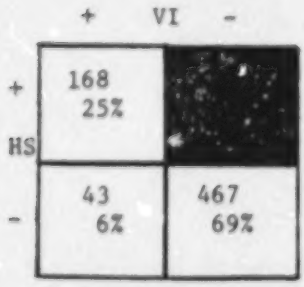
1. _____ District Code

2. _____ ADA

VOCATIONAL INSTRUCTOR-HANDICAPPED STUDENT INTERACTIONS

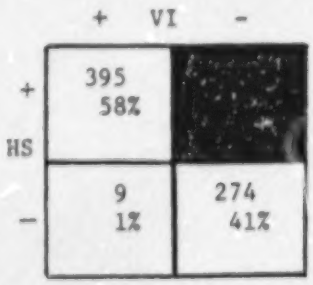
	Instruction No	Instruction Yes	
3.	0 12 2%	1 666 98%	VI places HS in small group with nonhandicapped students.
4.	18 3%	660 97	VI places HS in small group with handicapped students.
5.	654 96%	24 4%	VI includes HS in large group with all students.
6.	606 89%	72 11%	HS works independently at task.

7. Lecture



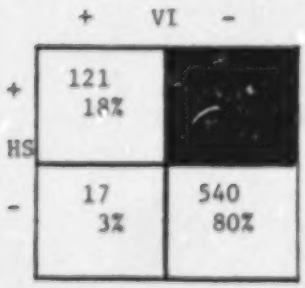
VI lectures
HS attends

8. Concrete experiences



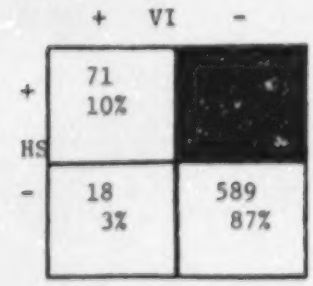
VI provides
HS participates

9. Representational experiences



VI provides
HS participates

10. Abstract Experiences



VI provides
HS participate

11. Encourage participation

HS \ VI	+	-
+	168 25%	453 67%
-	8 1%	49 7%

VI encourages
HS participates

12. Clarify information

HS \ VI	+	-
+	141 21%	6 1%
-	5 1%	526 78%

VI clarifies
HS indicates need for clarification

13. Recommendations

HS \ VI	+	-
+	179 26%	
-	7 1%	492 73%

VI makes recommendations
HS follows recommendations

14. Orders

HS \ VI	+	-
+	62 9%	
-	8 1%	608 90%

VI gives commands or orders
HS follows orders

15. Communication on Task

HS \ VI	+	-
+	141 21%	
-	6 1%	426 63%

a.
VI communicates on task
HS responds on task

HS \ VI	+	-
+	105 15%	
-		

b.
VI responds on task
HS communicates on task

16. Additional Help

HS \ VI	+	-
+	114 17%	2 1%
-	32 5%	529 78%

VI provides
HS requests

17. Questioning

HS \ VI	+	-
+	160 24%	
-	6 8%	502 74%

a. VI use positive questioning HS responds

HS \ VI	+	-
+	9 1%	
-	1 1%	

b. VI use negative questioning HS responds

Environment

	No	Yes	
	0	1	
18.	306 45%	372 55%	Laboratory setting.
19.	378 56%	300 44%	Classroom setting.
20.	672 99%	6 1%	VI utilizes a peer tutor for HS.
21.	678 100%		VI utilizes a teachers aide for HS.
22.	30 4%	648 96%	VI does not utilize additional personnel to assist HS.
23.	18 3%	660 97%	HS is at work station as part of the class.
24.	666 98%	6 1%	HS is at work station in an isolated spot in the classroom.

Affective

25. Communication on a general topic

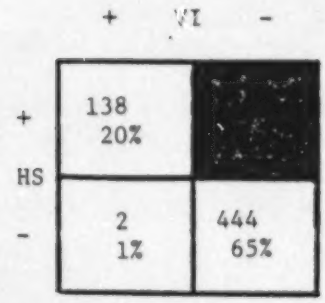
HS \ VI	+	-
+	73 11%	
-	1 1%	556 82%

a. VI communicates HS responds

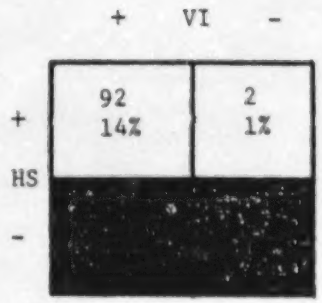
HS \ VI	+	-
+	46 7%	2 1%
-		

b. VI responds HS initiates

26. Positive social or emotional interaction

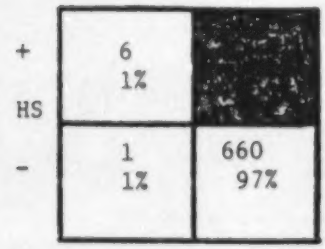


a.
VI initiates
HS responds

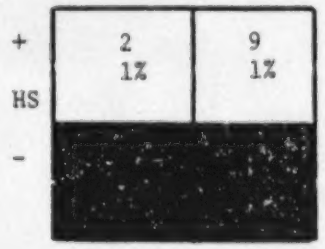


b.
VI responds
HS initiates

27. Negative social or emotional interaction



a.
VI initiates
HS responds

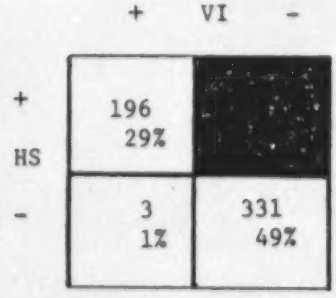


b.
VI responds
HS initiates

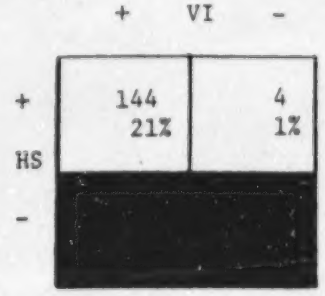
Management

	No	Yes	
	0	1	
	552	126	
28.	81%	19%	VI approaches subject matter in a formal way.
	126	552	
29.	19%	81%	VI approaches subject matter in a casual way.

30. Communication



a.
HS initiates
NHS responds



b.
HS responds
NHS initiates

31. Additional help

HS \ VI	+	-
+	101 15%	1 1%
-	5 1%	471 69%

a.
HS requests
NHS provides

HS \ VI	+	-
+	100 15%	
-		

b.
HS provides
NHS requests

32. Positive social or emotional interaction

HS \ VI	+	-
+	190 28%	
-	2 1%	311 46%

a.
HS initiates
NHS responds

HS \ VI	+	-
+	168 25%	7 1%
-		

b.
HS responds
NHS initiates

33. Negative social or emotional interaction

HS \ VI	+	-
+	19 3%	
-	3 1%	650 96%

a.
HS initiates
NHS responds

HS \ VI	+	-
+	6 1%	
-		

b.
HS responds
NHS initiates

34. Disruptive or inappropriate behavior

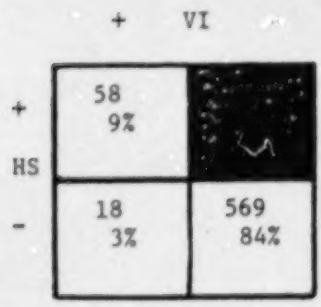
HS \ VI	+	-
+	9 1%	
-	6 1%	660 97%

a.
HS initiates
HNS participates

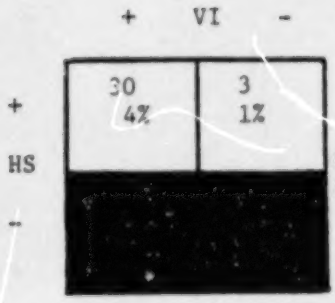
HS \ VI	+	-
+	3 1%	
-		

b.
HS participates
NHS initiates

35. Inappropriate behavior on task



a.
HS initiates
NHS participates



b.
HS participates
NHS initiates